SONY

HD VIDEOCASSETTE RECORDER

HDV-10

HDVS UNIHI

OPERATION MANUAL English

1st Edition (Revised 3)

Serial No. 10001 and Higher

For the customers in the USA

WARNING
This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

You are cautioned that any changes or modifications not expressly approved in this manual could void your authority to operate this equipment.

The shielded interface cable recommended in this manual must be used with this equipment in order to comply with the limits for a digital device pursuant to Subpart B of Part 15 of FCC Rules.

WARNING: Changing the voltage selector may require the use of a different line cord or attachment plug, or both. To reduce the risk of fire or electric shock, refer servicing to qualified service personnel.

For the customers in Canada
This apparatus complies with the Class A limits for radio noise emissions set out in Radio Interference Regulations.

Pour les utilisateurs au Canada
Cet appareil est conforme aux normes Classe A pour bruits radioélectriques, spécifiés dans le Règlement sur le brouillage radioélectrique.

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Section 1. GENERAL

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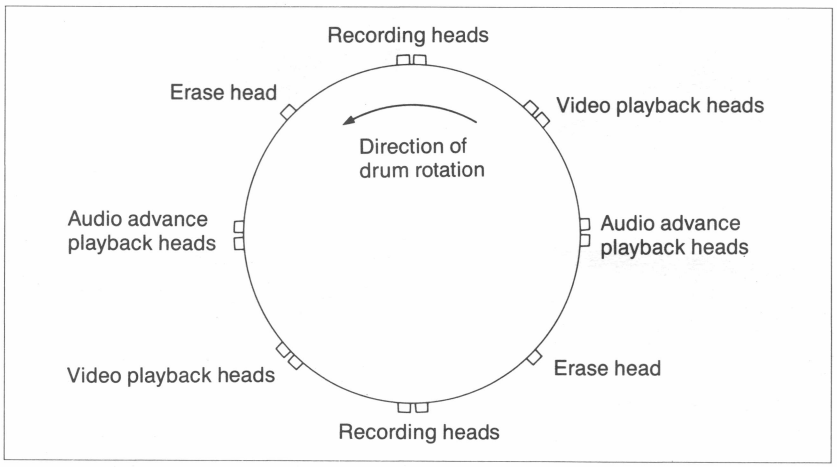
1-1. Outline

The HDV-10 high-definition 1/2-inch videocassette recorder provides recording and playback of video signals complying with BTA-S001 and SMPTE-240M studio HDTV standards and four channels of PCM audio. Based on the UNIHI* format, it offers the same operating and editing functionality as the HDD-1000 HD digital videocorder (1-inch open reel recording system), for all commercial and studio applications.

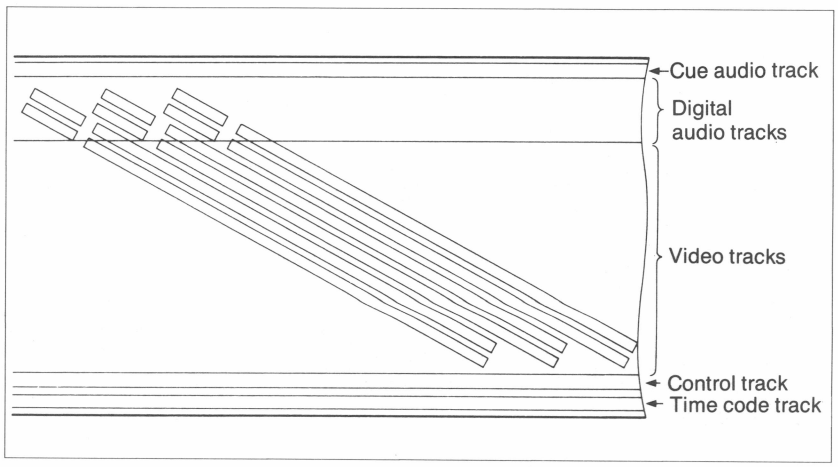
Head arrangement on the drum

The unit has recording, playback and erase heads for both video and audio.



Head arrangement on the drum

Tape recording format



Tape recording format

*** UNIHI format**
This is a compact high definition VTR standard developed jointly by NHK (The Japan Broadcasting Corporation) and ten consumer electronics companies.

High quality audio and video

The UNIHI format gives high sound and picture quality. The PCM audio recording means no loss of quality when dubbing.

Video signals
The video signals comply with BTA standards. The video sampling frequencies are 48.6 MHz for the Y signal, and 16.2 MHz for the P_B/P_R signal. The signals are 8-bit quantized, then converted to two time compressed integration (TCI) signal channels and recorded in analog.

Digital audio signals
There are four digital audio channels, recorded and played back using a sampling frequency of 48 kHz and 16-bit quantization. The frequency range is 20 Hz to 20 kHz, and the dynamic range is at least 90 dB. The unit is also provided with AES/EBU standard digital inputs and outputs, and eliminates audio dubbing quality loss.

Picture quality in slow-motion and search modes
The high-quality signal processing circuitry gives much improved picture quality during slow-motion playback and search modes compared with conventional analog VTRs.

Easy operation

System designed for operating convenience
The unit requires no extra optional components for most applications, and in particular includes the following as standard:

- Level control panel, function control panel and video control panel
- Time code generator and reader
- Video monitor heads

Menu selection for setting up the unit
All of the normal set-up functions and test modes can be accessed from a menu system, without the need for internal switch settings. The function control panel display makes menu operations largely self-explanatory.

Wide range of functions

Multi-cue function
Up to ten cue points can be set using the function control panel, allowing easy cuing.

Color playback for special playback modes
A color playback is available at up to eight times normal speed (forward or reverse) in SHUTTLE, JOG and VAR modes.

Synchronized sequential recording and playback functions
This allows two VCRs to be automatically operated in turn to allow continuous playback of feature-length films.

Analog cue channel
In addition to the four digital audio channels, there is a longitudinal analog cue channel. By recording the same signals as on the digital audio channels, the cue channel can be used to assist in setting edit points on the digital channels.

Reliability and ease of maintenance

Error message display
If an error should occur while the unit is operating, a message flashes on the function control panel display. If required, messages can also be superimposed on the monitor.

High reliability and easy maintenance
A variety of engineering techniques have been used to give more reliable performance.

- Easy access to the chassis, boards, motors, control panel and so forth.
- The circuits are arranged in large functional blocks on the boards, reducing interface overheads, and the number of wiring harnesses and connectors.
- LSI technology is used to reduce the chip count.
- The computer-controlled servo system enables semi-automatic adjustment of the tape transport system to be carried out easily.

Variety of system interfaces

Four remote control interfaces
The unit has four remote control interfaces, one for I/O signal control, and three for remote control signals. Of these, the 9-pin serial interface connects directly to existing editors and controllers, for easy system integration. Additionally the simple remote control interface (SIRCS: standard code for infrared control system) can be used to access the function control interface.

The RM-770 remote control unit (supplied separately) can be connected to the unit either directly by a cable interface, or via an infra-red wireless connection.

Compact and lightweight

The extremely light and compact construction is due to the use of higher density LSI chips and Sony's own advanced tape transport technology.

Standard EIA 19-inch rack mounting

The unit can be mounted in a standard rack, occupying seven vertical units.

1-2. Specifications

General

Power requirements	100 to 120/200 to 240 V AC ±10% selectable, 50/60 Hz
Power consumption	450 W (650 VA) max.
Operating temperature	5°C to 40°C (41°F to 104°F)
Storage temperature	−40°C to +55°C (−40°F to +131°F)
Humidity	25% to 80% (No condensation)
Weight	49 kg (108 lb)
Dimensions (w/h/d)	424 × 331 × 621 mm (16¾ × 13⅛ × 24½ inches) including projecting parts *See page 1-8.*
Recording format	UNIHI
Tracks/channels	Video ..... 2 (6 tracks/field) Analog audio (cue) ..... 1 Digital audio..... 2 Time code..... 1 CTL (control) 1
Tape speed	119.7 mm/sec. (4¾ inches/sec.)
Recording speed (relative speed)	21.37 m/sec. (70 feet 1⅜ inches/sec.)
Recording time	63 minutes max.
Servo lock time	2 sec. max. (from STANDBY on mode to frame capstan servo locking)
Tape timer accuracy	±2 frames (with continuous CTL signal)
Audio error correction	Detection and correction using reed solomon code
Fast forward/rewind time	150 sec. max.
Cassette type	1/2-inch metal-coated UNIHI videocassette tape (thickness: 13.5 µm ±0.5 µm)

Video

Video bandwidth	Y: 0 to 20 MHz, −1 to −6 dB P_B, P_R: 0 to 7 MHz, −4 to −9 dB (line sequential)
S/N ratio	Y: 40 dB P_B, P_R: 46 dB (non-linear emphasis on)*
K factor	5 max. (2T pulse)
Tilt	3% max. (horizontal and vertical)
Linearity	5% max. (at low frequency)
Channel delay time	±15 ns max.
Input/output return loss	20 dB min.
Input level variable range	0.7 V ±0.1 V
Output level variable range	0.7 V ±0.1 V Sync phase: +0.6 to −0.3 µs

Digital audio (Channels DA-1 to DA-4)

Sampling frequency	48 kHz (synchronized to video)
Quantization	16 bits/sampling
Frequency response	20 Hz to 20 kHz $^{+0.5}_{-1.0}$ dB (at 1 kHz, 4 dBm nominal)
Dynamic range	90 dB min. (at 1 kHz, emphasis on)
Distortion	0.05% max. (at 1 kHz, emphasis on, 0 VU headroom 18 dB)
Wow & flutter	Less than measurable
Crosstalk	−80 dB max. (between channels, at 1 kHz)
Emphasis	$T_1 = 50$ µs/$T_2 = 15$ µs (ON/OFF switchable)
Level (analog XLR)	Input: −16 dBm to +10 dBm (4 dBm nominal) 150 ohm/600 ohm/10 k ohm impedance, balanced Output: 4 dBm, 600 ohm impedance, balanced
Headroom	18 dB
Delay (output)	±0.5 frame, variable (relative to video signal)
Phase skew between channels	Less than 10° (at 15 kHz)

* As measured by Shibasoku noise meter VN32A6.

Analog cue audio (cue track)

Frequency response	100 Hz to 10 kHz ±2 dB
S/N ratio	50 dB min. (at 3% distortion)
Distortion	1.5% max. (0 VU headroom 12 dB)
Wow & flutter	0.2% max. (0.5 to 200 Hz, NAB, unweighted)
Level	Line input: −16 dBm to +10 dBm, 600 ohm impedance, balanced Microphone input: −60 dBs, balanced Output: 4 dBm, 600 ohm impedance, balanced

Input/output signal

Video input/output

Analog (BNC)	G/B/R, Y/P_B/P_R input: 1.0 Vp-p ±1 dB SYNC input: ±0.3 V ±1 dB G/B/R, Y/P_B/P_R output: 0.7 Vp-p (video), ±0.3 V (sync) SYNC output: ±0.3 V, 75 ohms, G/B/R or Y/P_B/P_R selectable
Monitor output (BNC)	Y, G/B/R, Y/P_B/P_R: 0.7 Vp-p (video), ±0.3 V (sync)
Waveform monitor output (BNC)	G/B/R/Y/P_B/P_R: 0.7 Vp-p (video), ±0.3 V (sync), 75 ohms
Waveform monitor trigger output (BNC)	0.3 Vp-p, 75 ohms

Audio input

Analog DA-1 to DA-4 (XLR)	−16 dBm to +10 dBm, 150 ohms/ 600 ohms/10 k ohms, balanced
Cue input (XLR)	−16 dBm to +10 dBm, 600 ohms/ 10 k ohms, balanced (Microphone input: −60 dBs)
Digital (XLR)	AES/EBU format

Audio output

Analog DA-1 to DA-4 (XLR)	+4 dBm nominal, 600 ohms, balanced
Cue output (XLR)	+4 dBm nominal, 600 ohms, balanced
Monitor output (XLR)	+4 dBm, 600 ohms, balanced L/R channels, analog audio signals selectable
Headphone output	8 ohms, unbalanced, variable
Digital (XLR)	AES/EBU format

Time code

Input/output (XLR) SMPTE/EBU time code, 600 ohms, balanced

Remote control

REMOTE-1 (RS-232C) (D-SUB 25-pin)
For RS-232C interface

REMOTE-2A IN, REMOTE-2A OUT,
REMOTE-2B IN/OUT (D-SUB 9-pin)
For 9-pin interface

VA CONTROL (D-SUB 15-pin)
For video/audio input/output level control

REMOTE (mini jack) For simple remote control by SIRCS
(standard code for infrared control system)

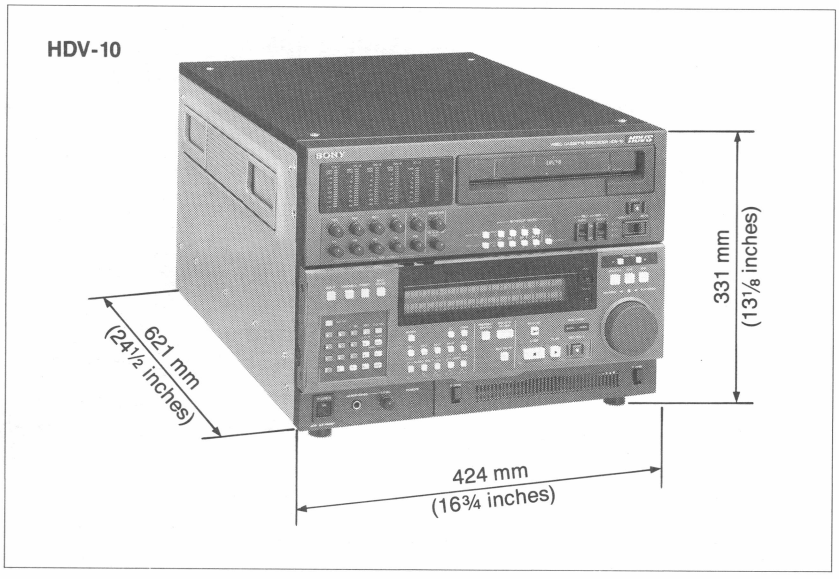
Accessories supplied

Extension boards (3)
Overlay sheets (blank) for the 21-key section (2)
Key ID labels (2)
Maintenance sheet
Rack mounting kit
AC power cord
Operation manual, maintenance manual

Optional accessories

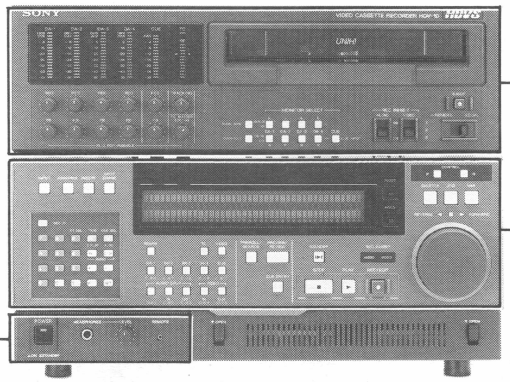
ECD-3C/10C/30C digital audio cable
RCC-5G/10G/30G 9-pin remote control cable
RM-770 remote control unit
RMM-18DV rack mounting rail

External dimensions



Design and specifications are subject to change without notice.

1-3. Location and Function of Parts

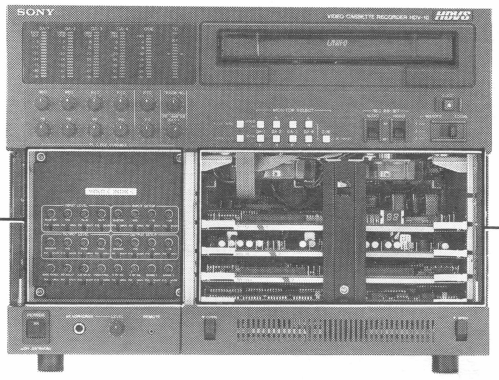


Level control panel
See Section 1-3-1.

Function control panel
See Section 1-3-2.

Power switch and jack section
See Section 1-3-3.

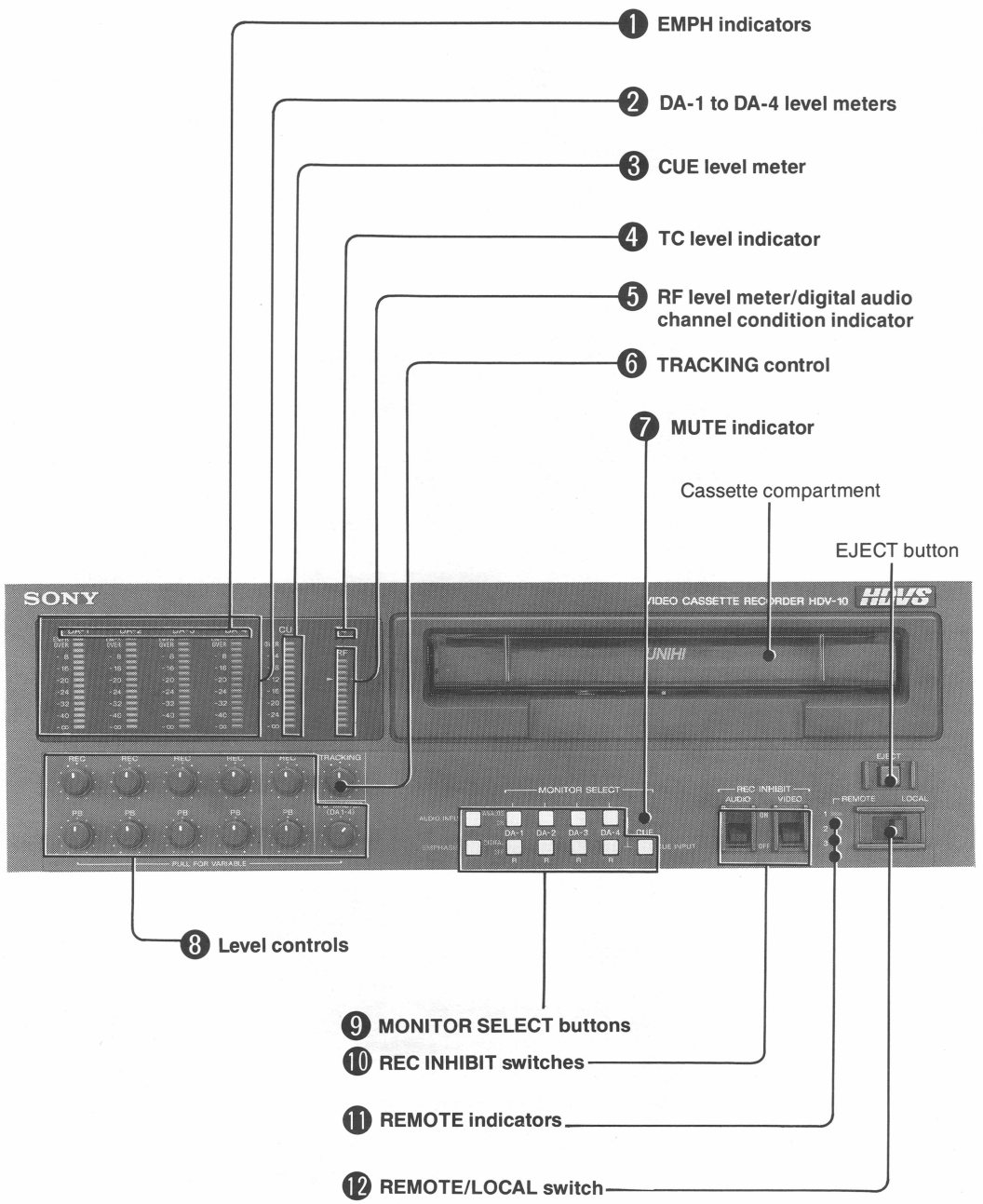
Connector panel
See Section 1-3-4.



Video control panel
See Section 1-3-5.

Internal circuit boards
See Section 2-5.

1-3-1. Level Control Panel



❶ EMPH (emphasis) indicators
Four indicators corresponding to the four digital audio channels DA-1 to DA-4. When emphasis is applied to the input or playback signals for digital audio channels, the corresponding ones among these indicators light.

❷ DA-1 to DA-4 (digital audio 1 to 4) level meters
Four meters corresponding to the four digital audio channels. Each meter comprises 15 LEDs which light to indicate the audio signal level on the corresponding digital audio channel. Of the 15 LEDs, the bottom one is always lit.

The signal level indications given by the level meters depend on the settings of menu item S79 AUDIO LEVEL METER and I74 CALIBRATION LEVEL as follows:

Setting / LED segment	Indication (dBs)						
	S75. AUDIO LEVEL METER						
	NORMAL, 2 SEC, HOLD	CAL NOR (flashing mode)		CAL EXP (0.2 dB/seg mode)			
		Flashing	Lit	I74. CALIBRATION LEVEL			
				− 16 dB	− 18 dB	− 20 dB	− 22 dB
OVER	+21.8 or over		+21.8 or over	+21.8 or over	+21.8 or over	+21.8 or over	+21.8 or over
(−4)	+18 or over	+18.0 to +18.1	+18.1 or over	+6.5 or over	+4.7 or over	+2.9 or over	+1.1 or over
−8	+14 or over	+14.0 to +14.1	+14.1 or over	+6.3 or over	+4.5 or over	+2.7 or over	+0.9 or over
(−12)	+10 or over	+10.0 to +10.1	+10.1 or over	+6.1 or over	+4.3 or over	+2.5 or over	+0.7 or over
−16	+ 6 or over	+ 6.0 to + 6.1	+ 6.1 or over	+5.9 or over	+4.1 or over	+2.3 or over	+0.5 or over
(−18)	+ 4 or over	+ 4.0 to + 4.1	+ 4.1 or over	+5.7 or over	+3.9 or over	+2.1 or over	+0.3 or over
−20	+ 2 or over	+ 2.0 to + 2.1	+ 2.1 or over	+5.5 or over	+3.7 or over	+1.9 or over	+0.1 or over
(−22)	0 or over	0 to + 0.1	0 or over	+5.3 or over	+3.5 or over	+1.7 or over	−0.1 or over
−24	− 2 or over		− 2 or over	+5.1 or over	+3.3 or over	+1.5 or over	−0.3 or over
(−28)	− 6 or over		− 6 or over	+4.9 or over	+3.1 or over	+1.3 or over	−0.5 or over
−32	−10 or over		−10 or over	+4.7 or over	+2.9 or over	+1.1 or over	−0.7 or over
(−37)	−15 or over		−15 or over	+4.5 or over	+2.7 or over	+0.9 or over	−0.9 or over
−42	−20 or over		−20 or over	+4.3 or over	+2.5 or over	+0.7 or over	−1.1 or over
(−48)	−26 or over		−26 or over	+4.1 or over	+2.3 or over	+0.5 or over	−1.3 or over
−∞	−∞		−∞	−∞	−∞	−∞	−∞

0 dBs = 0.775V

The audio signals whose levels are indicated on these meters are determined by the operation mode of the unit and the status of the TAPE/IN key (indicated by whether the TAPE indicator is on or off) in the 21-key section and the INPUT button as follows:

Operation mode: INPUT button status	Operation mode: TAPE indicator on or off	STOP mode	REC/EDIT mode	Other modes
Pressed*1	Either	INPUT or EE*2,*3	INPUT or EE*2,*3	INPUT or EE*2,*3
Not pressed	On	TAPE	EE*3	TAPE
	Off	EE*3	EE*3	TAPE

❸ **CUE level meter**
This meter indicates the playback level of the CUE channel.

❹ **TC (time code) level indicator**
This indicator lights when the playback level of the time code/user bit data is appropriate.

❺ **RF level meter/digital audio channel condition indicator**
This indicator indicates the video RF level (the higher the level, the more the LEDs lit) or the condition of the currently selected digital audio channel (the fewer the errors, the more the LEDs lit) depending on the setting of menu item S80 RF LEVEL METER.

❻ **TRACKING control**
This control has two positions: pulled-out and pushed-in.
When pulled out: You can use this control to adjust the tracking error during playback.
When pushed in: Tracking is fixed at the factory setting.

❼ **MUTE indicator**
This indicator lights when any of the digital audio channels DA-1 to DA-4 is muted during playback.

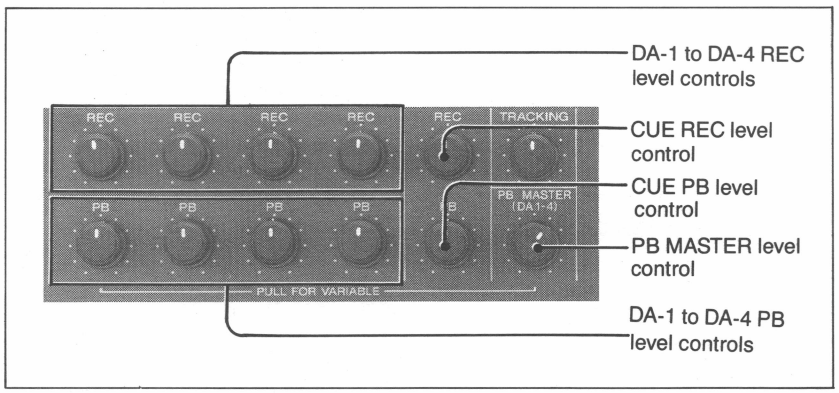
*1 The DA-1 to DA-4 level meters ❷ indicate the signal levels adjusted by the DA-1 to DA-4 REC level controls ❽.

*2 Either INPUT or EE is selected according to the setting of menu item I04 INPUT CHECK MODE.

*3 **EE (Electronics-to-Electronics)**
The input signal output after being processed internally without being recorded on tape.

⑧ Level controls

These controls have two positions: pulled-out and pushed-in. Pull them out to adjust the corresponding recording or playback levels.



DA-1 to DA-4 REC (audio recording) level controls

When pulled out: You can use these controls to adjust the audio recording levels on the corresponding audio channels.

When pushed in: The audio recording level on each of channels DA-1 to DA-4 is fixed at the factory set level (0 dB).

Note

Manual adjustment with these controls is not possible when the audio input signals are digital.

DA-1 to DA-4 PB (audio playback) level controls

When pulled out: You can use these controls to adjust the levels of the audio playback signals (output from the ANALOG/DIGITAL AUDIO OUT connectors) on the corresponding audio channels in the range of $-\infty$ to $+6$ dB. When the ASSEMBLE or INSERT button is lit, the gain of each audio playback signal is fixed at 0 dB.

When pushed in: The audio playback level on each of channels DA-1 to DA-4 is fixed at the factory set level (0 dB).

CUE REC (cue recording) level control

When pulled out: You can use this control to adjust the cue channel recording level.

When pushed in: The cue channel recording level is fixed at the factory set level (0 dB). (It is possible to change the presetting using a control on an internal circuit board. *For details, refer to the maintenance manual.)*

CUE PB (cue playback) level control

When pulled out: You can use this control to adjust the cue channel playback level.

When pushed in: The cue channel playback level is fixed at the factory set level (0 dB). (It is possible to change the presetting using a control on an internal circuit board. *For details, refer to the maintenance manual.)*

PB MASTER (audio playback) level control

When pulled out: You can use this control to adjust the levels of all audio playback signals (output from the ANALOG/DIGITAL AUDIO OUT connectors) simultaneously in the range of −2.5 dB to +1.9 dB. (If the ASSEMBLE or INSERT button is lit, the gain of each audio playback signal is fixed at 0 dB.)

When pushed in: The gain of each audio playback signal is fixed at the factory set level (0 dB).

⑨ MONITOR SELECT (audio monitor select) buttons

Use these buttons to select the audio signals to be output from the HEADPHONES jack and the MONITOR L/R connectors (on the connector panel).

DA-1 to DA-4

Four pairs of buttons corresponding to the four digital audio channels. Each pair of buttons are also labeled L and R corresponding to the MONITOR L/R connectors. When any of these buttons is pressed, it lights and causes the corresponding audio signal to be output.

CUE/CUE INPUT

When this button is pressed, it lights and causes the signal from the cue channel to be output.

When this button is held down with menu item S13 CUE INPUT SELECT set to DIGITAL, the L/R buttons of the chanels currently selected for cue input will light. You can change the channel selection by pressing the L/R buttons of different channels while holding down this button.

AUDIO INPUT

When this button is held down, the L or R buttons for DA-1 to DA-4 light to indicate whether the audio input signal selected for each channel is analog (represented by the L button) or digital (represented by the R button).

To change the selection between analog and digital for any of the four channels, press the L or R button, whichever is off, for that channel.

Note

If the R button for a channel flashes on and off when pressed to select the digital input signal for that channel, either no digital signal is being input to the channel or the digital input signal is not synchronized with the reference signal.

EMPHASIS

When this button is held down, the L or R buttons for the channels for which analog input signals have been selected light to indicate whether emphasis is applied (the L buttons light) or not (the R buttons light) to the channels.
To change emphasis setting for any of such channels, press the corresponding L or R button, whichever is off.

Note

Whether emphasis is applied to a channel for which the digital input signal has been selected is determined by the input signal itself. Therefore, you cannot change the emphasis setting for such a channel by using the EMPHASIS button.

⑩ REC INHIBIT switches (AUDIO ON/OFF and VIDEO ON/OFF)

These switches turn audio and video recording functions on and off, respectively. The effects of their settings in different recording modes are as follows:

Recording mode	REC INHIBIT		Whether recordable/ unrecordable
	AUDIO	VIDEO	
Recording	OFF	OFF	Audio and video recordable
	Other combinations		Audio and video unrecordable
Insert editing	OFF	OFF	Audio and video recordable
	OFF	ON	Only audio recordable
	ON	OFF	Only video recordable
	ON	ON	Audio and video unrecordable
Assemble editing	OFF	OFF	Audio and video recordable
	Other combinations		Audio and video unrecordable

Regardless of the settings of these switches, you can record neither audio nor video signals on a cassette tape with its record-inhibit key set to the record-inhibit position.

⑪ REMOTE indicators (1-3)

When the REMOTE/LOCAL switch ⑫ is set to REMOTE, one of these three indicators lights to indicate which remote control connector is currently selected.

See menu item S01 REMOTE SELECT for the remote-control connector selection.

Indicator 1: The REMOTE-1(RS-232C) connector on the connector panel (for remote control via an RS-232C interface) has been selected.

Indicator 2: Either one or both of the REMOTE-2A IN and the REMOTE-2A OUT connectors, or the REMOTE-2B IN/OUT connector (for remote control by 9-pin serial code) has been selected.

Indicator 3: The REMOTE jack in the power switch and jack section on the front of the unit (for remote control by SIRCS) has been selected.

When the REMOTE/LOCAL switch ⑫ is set to REMOTE without menu item I05 LOCAL KEY ENABLE set to DISABLE

The indicator corresponding to the current remote-control connector selection will flash when a LOCAL DISABLE command is received from other equipment (for example, an editor).

⑫ REMOTE/LOCAL switch

REMOTE: Set this switch to REMOTE for remote control of the unit using control signals received from other equipment such as another VTR or an editor connected to this unit.
When the switch is set to REMOTE, the operability of the controls on the function control panel is determined by the setting of menu item I05 LOCAL KEY ENABLE. Changing the setting of this switch from LOCAL to REMOTE does not affect the indicators and the timer data display on the function control panel.

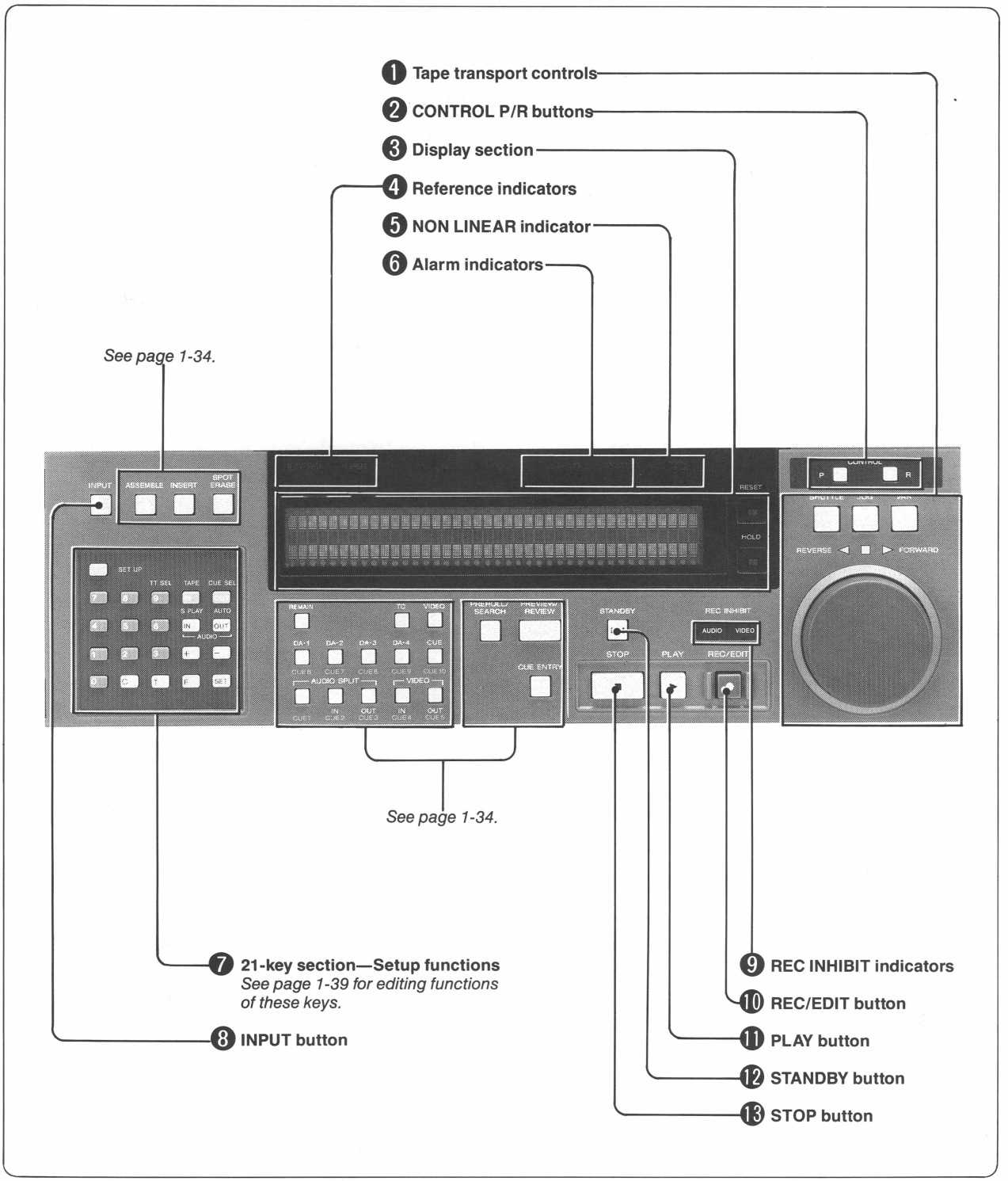
Note

The Preselect menu is always available regardless of the setting of the menu item I05 LOCAL KEY ENABLE.

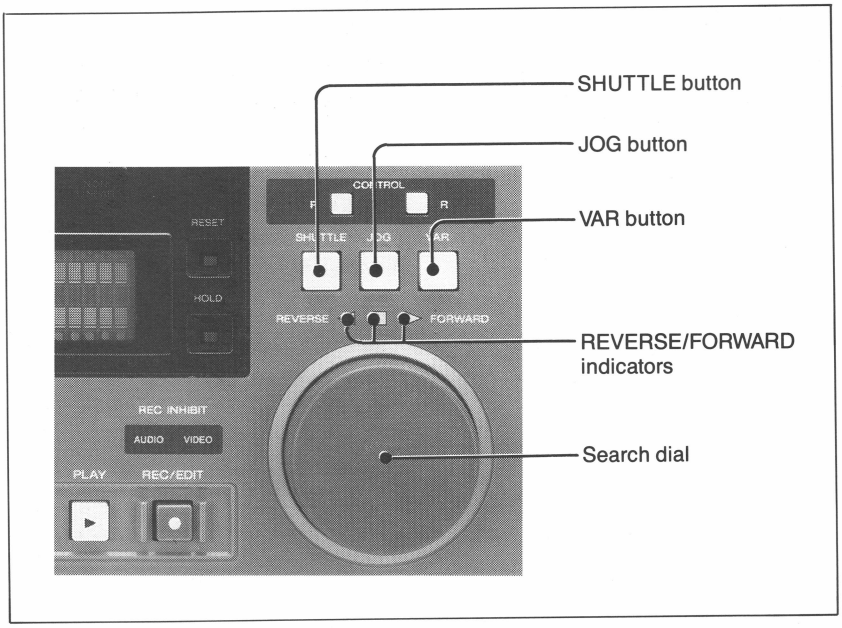
LOCAL: Set this switch to LOCAL to operate this unit by itself or to operate it together with another VTR connected to it. In the latter case, you can operate the two units either concurrently in the same mode or by using this unit as the master unit (recorder) and the other as the slave unit (player). You can control both units from the function control panel of this unit.

See page 1-21.

1-3-2. Function Control Panel



❶ Tape transport controls



SHUTTLE button
Press this button to enter SHUTTLE mode; it will light. *See Section 3-3-2 "SHUTTLE Mode."*

JOG button
Press this button to enter JOG mode; it will light. *See Section 3-3-3 "JOG Mode."*

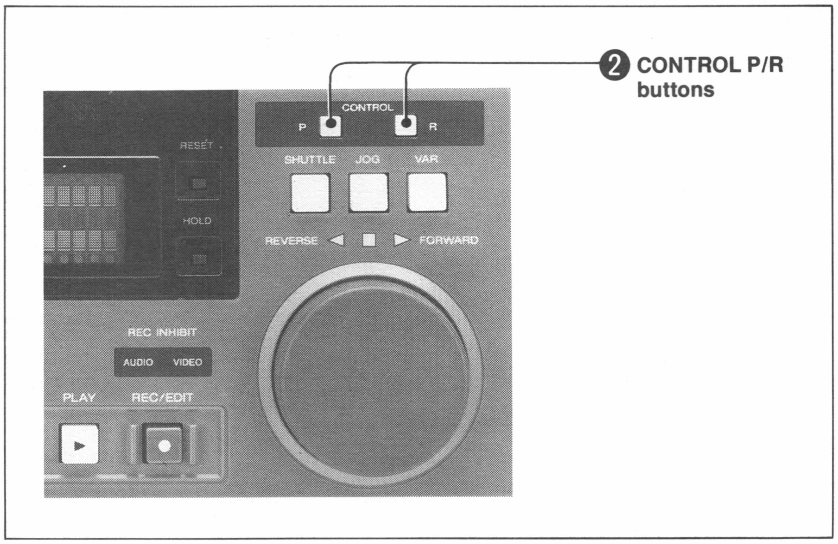
VAR (variable) button
Press this button to enter PROGRAM JOG mode; it will light. You can also use this button to preset the tape speed. *See Section 3-3-4 "PROGRAM JOG Mode."*

REVERSE/FORWARD (tape running direction) indicators (from left to right: green, red, green)
The two green indicators (REVERSE and FORWARD) on the sides light to indicate the tape running direction. The red one in the center is normally lit while the POWER switch in the power switch and jack section is set to ON.
When controlling the tape motion with the search dial, one of the green indicators lights to show the tape running direction.
When the tape running speed and direction are preset for PROGRAM JOG mode, the green indicator corresponding to the preset tape running direction lights.
When the tape being moved nears the end, the green and the red indicators that have been lit will flash on and off.

Search dial
This dial controls the tape running speed and direction for playback. Turn this dial clockwise to play back the tape in the forward direction or counterclockwise to play it back in the reverse direction. The functions of this dial vary with the operation mode of the unit as follows:
In JOG, SHUTTLE, or PROGRAM JOG mode, this dial controls the tape running speed or direction.
In STOP, STANDBY, PLAY, or REC mode, you can use this dial to preset the tape running speed and direction for PROGRAM JOG mode to be entered subsequently. The preset tape speed will appear in block 5 of the display ❸.

You can also use this dial to display the internally stored addresses of lost-lock and muted errors detected during the preceding playback operation. To do so, turn the dial in either direction while holding down the STOP button **in STOP mode** or the STANDBY button **in PLAY, REC, or EDIT mode**. The stored addresses will appear in turn in blocks 3 and 4 of the display and the corresponding flashing message "LOST LCK" or "MUTE" will appear in block 6.
In SET UP mode, you can use this dial to make settings.

❷ CONTROL P/R (player/recorder control select) buttons



When operating this unit as the master unit (recorder) with another VTR as a slave unit (player), these buttons determine which unit or units this control panel operates. The P button switches control of the player on and off alternately each time it is pressed, and the R button acts similarly for the recorder. The two buttons operate independently, so that all four on-off combinations are possible. To use these buttons, connect the slave unit to the REMOTE-2A OUT or REMOTE-2B IN/OUT connector and set menu item S01 REMOTE SELECT to RM2A or RM2B. Then, set the REMOTE/LOCAL switch on the level control panel to LOCAL to enable control from this unit. The same switch of the slave unit must be set to REMOTE.

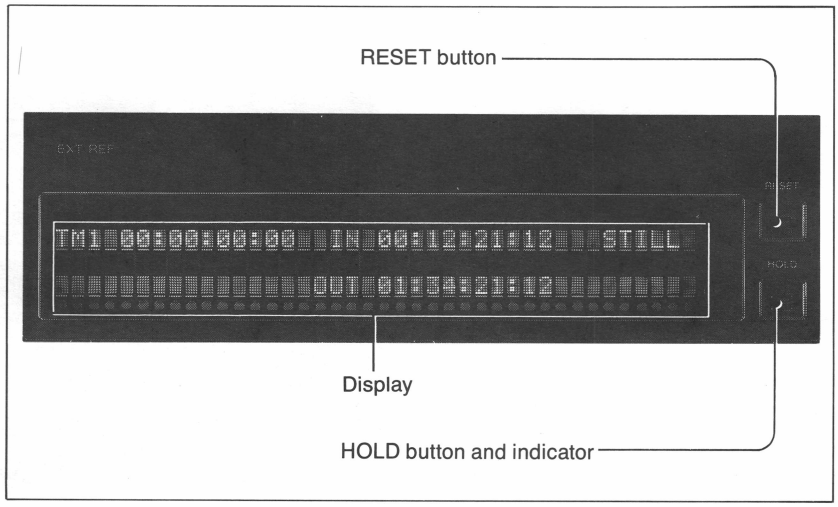
When the P button only is lit: The controls for editing and tape transport on this unit (recorder) control the player, to allow remote control of the player from the recorder. This unit also displays information on the player operation.

When the R button only is lit: The controls on this unit (recorder) remain effective for the recorder. In AUTO EDIT mode *(see Section 3-4-2 "Automatic Editing"),* you can control the previewing, automatic editing, and reviewing functions of both the recorder and the player from the recorder.

When both the P and the R buttons are lit: If menu item S08 PARA RUN is set to ENABLE, you can control both the recorder and the player from this unit (recorder) to operate them concurrently in the same mode.

When both the P and the R buttons are off: The controls of this unit (recorder) are effective only for the recorder itself. Both buttons will also go off if, for example, communications between the recorder and the player are disabled due to a cable fault.

❸ Display section



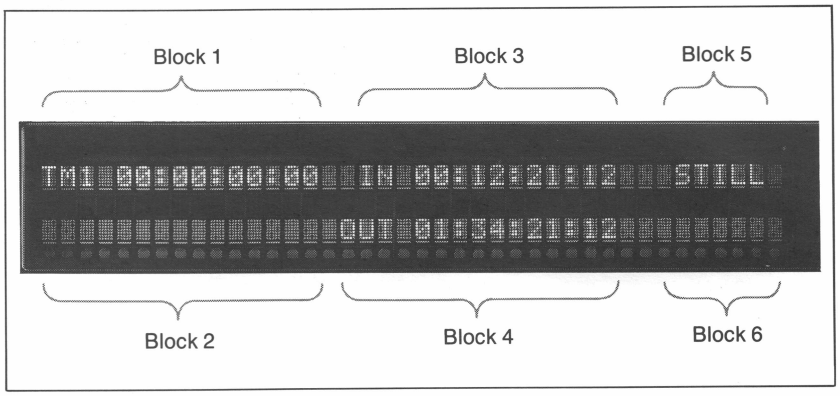
RESET button
Press this button to reset the timer-1 data, the data from the time code generator, or the user bit data displayed in block 1 of the display to 0.

HOLD button and indicator
Press the HOLD button to hold the data displayed in block 1 of the display. The indicator will light to indicate that the data hold mode has been entered. If you press the button again, the indicator will go off and the current data will appear in block 1 of the display.

Notes

- When menu item S55 TC REGEN/PRESET SEL is set to REGEN, you cannot reset the display of the time code generator data by pressing the RESET button.
- When menu item S56 UB REGEN/PRESET SEL is set to REGEN, you cannot reset the display of the user bit data by pressing the RESET button.

Display
The display consists of six blocks.



- Times (hh:mm:ss:ff) appearing in blocks 1 to 4 represent hours, minutes, seconds and frames.
- The display of the timer-1 and -2 data can be switched between the 12-hour mode and the 24-hour mode by changing the setting of menu item I54 TIMER DISPLAY MODE.
- The display is also used for menu operations. *See page 1-60.*

Block 1
This block indicates the tape running time on the currently selected unit (an HD VTR used as the recorder or player). The label before the time value identifies the data type. You can change the data displayed with the TT SEL key in the 21-key section ❼, the REMAIN button ⓱, the INPUT button ❽ and various menu selections.

See Section 3-1-2 "Displaying and Setting the Time Code, User Bits, and Timer Data".

Note
The HDV-10 unit is provided with the REMAIN button, but the HDD-1000 high-definition digital videocorder is not.

The labels that may appear and the data types they represent are as follows:
TCR: Time code read by the longitudinal time code (LTC) reader
TCR.: Time code read by the audio sub-code area time code (ATC) reader
TCG: Time code generated by the time code generator
UBR: User bit data read by the LTC reader
UBR.: User bit data read by the ATC reader
UBG: User bit data generated by the time code generator
TM1: Timer-1 data
TM2: Timer-2 data
REMAIN: Time representing the remaining length of the tape

Note

If the time code or user bit data cannot be read correctly, a data label such as T * R or U * R will appear.
However, if the LTC data is preceded by the label T * R while menu item I56 INTERPOLATED LTC is set to ENABLE, the data has been appropriately interpolated by the timer information.

Block 2

This block shows the player time code or timer data when the unit is operating in AUTO EDIT mode with another HD VTR connected as the player.

Block 3

This block shows the data previously displayed in block 4. When the data displayed in block 4 is updated with the progress of operation, the last data before updating is shifted into this block.

Block 4

This block shows the data entered or recalled using the keys in the 21-key section ❼ and CUE buttons ⓲, ㉒, and ㉓.

The data displayed is preceded by one of the following labels:

IN: Video or audio IN point
OUT: Video or audio OUT point
AI: Audio IN point
AO: Audio OUT point
DUR: Duration (time interval between the IN and OUT points based on timer 1 and time code)
LAP: Lap (time interval between the IN and OUT points based on timer 2)
C1-C10: Cue points entered using the CUE1-CUE10 buttons

Block 5

This block shows the tape speed during variable-speed playback. It is indicated as either a fraction or a multiple of the normal tape speed.

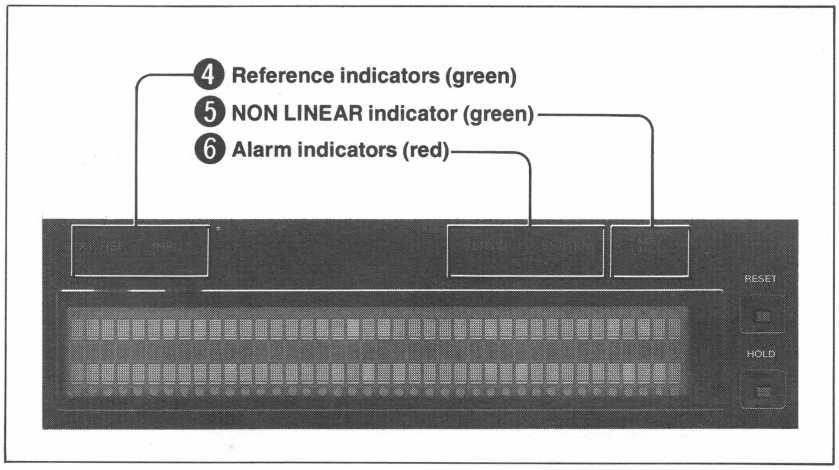
The tape speed displayed is determined by the operation mode as follows:
JOG mode: No data (is displayed.)
SHUTTLE or PROGRAM JOG mode: Current tape speed
Other modes: Tape speed preset for PROGRAM JOG mode

In SET UP mode, this block shows error messages which, in other modes, appear in block 6.

Block 6

If an error is detected, a flashing error message will appear in this block.

See Appendix A "Error Messages".



4 Reference indicators (green)
These two indicator light to indicate the reference signal selection made on menu item S12 REF SELECT.

EXT REF (external reference signal) indicator
This indicator lights when the external reference signal fed through the VIDEO IN EXT SYNC connector is selected.

INPUT (input video signal) indicator
This indicator lights when the input video signal is selected as the reference signal.

5 NON LINEAR (nonlinear emphasis) indicator (green)
This indicator lights when non-linear emphasis is applied to the EE signal or the playback video color difference signals (P_B and P_R).

6 Alarm indicators (red)
These two indicator light to indicate malfunctions.

SERVO alarm indicator
This indicator lights when the servo lock is lost.

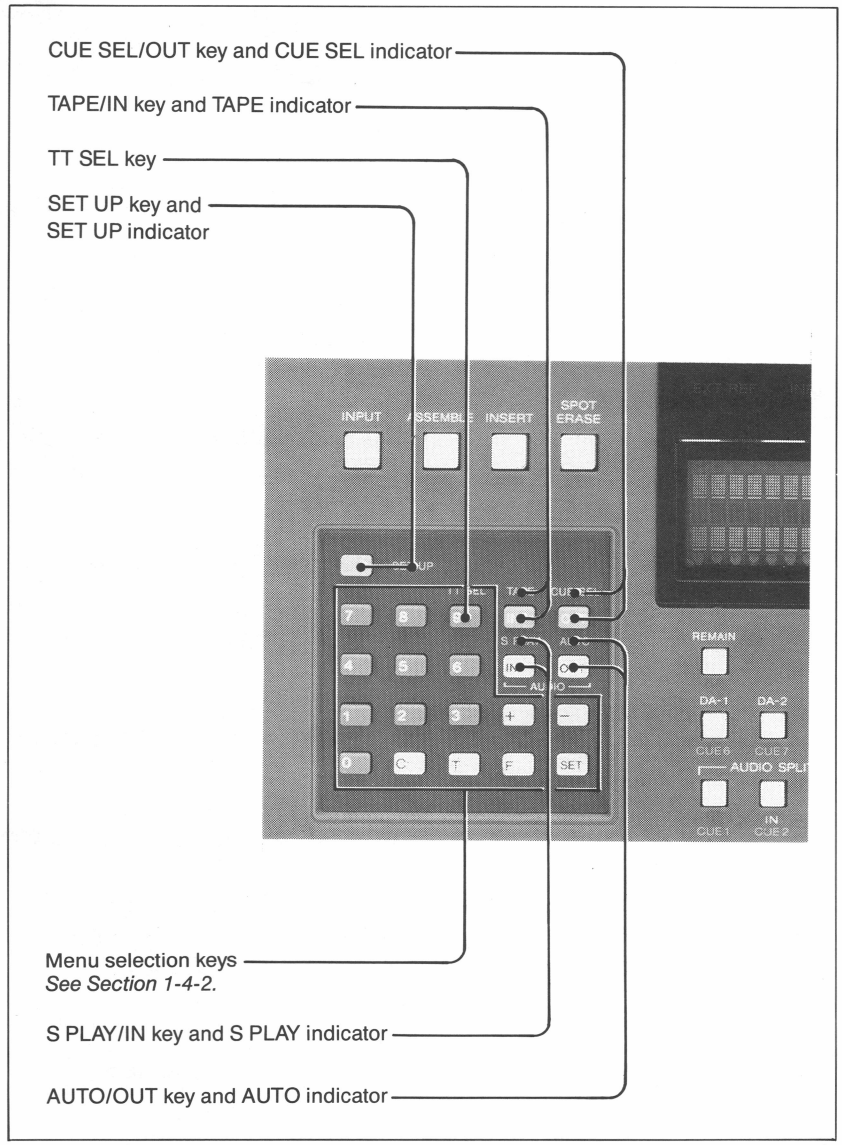
SYSTEM alarm indicator
This indicator lights when the system is unable to operate properly, for example, because of an operational error.

❼ 21-key section—Setup functions

When the SET UP mode is selected by pressing the SET UP key, the keys in the 21-key section are usable only for setup operation; you cannot use them for editing operation. The conditions set by such keys as the CUE SEL/OUT, TAPE/IN, TT SEL, S PLAY/IN, and AUTO/OUT keys in SET UP mode are retained after you exit SET UP mode.

The menu selection keys are used for menu operations.

See Section 1-4-2 "Menu Operations."



SET UP key and SET UP indicator
Press the SET UP key to enter SET UP mode; the SET UP indicator will start to flash. Press it again to exit SET UP mode, and the SET UP indicator will go off.

TT SEL (time code/timer select) key
Every time this key is pressed, the data selection for display in block 1 changes in a cycle of time code (or user bit data), timer-1 data, and timer-2 data.

For details, see Section 3-1-2 "Displaying and Setting the Time Code, User Bits, and Timer Data."

TAPE (tape/EE signal selection)/IN key and TAPE indicator
Use the TAPE/IN key to determine the video and audio signals to be output when the INPUT button ❽ is off. When the key is pressed, the TAPE indicator will light. When it is pressed again, the TAPE indicator will turn off.

The status of this key and the INPUT button ❽ determines the signals to be output from the VIDEO OUT, VIDEO MONITOR OUT, ANALOG AUDIO OUT, DIGITAL AUDIO OUT, and MONITOR L/R connectors. *See the tables on pages 1-28 and 1-29.*

For the signals output during editing, see Section 3-4-2 "Automatic Editing."

Video output selection (For the VIDEO OUT and VIDEO MONITOR OUT connectors)

INPUT button status	TAPE indicator on or off	Operation mode				
		STANDBY off	STANDBY on	REC/EDIT	PLAY, etc.	PREVIEW (for section between IN and OUT points on recorder)*1
Pressed*2	Either	INPUT	INPUT	INPUT	INPUT*3	INPUT
Not pressed	On	TAPE	TAPE	TAPE*4	TAPE	EE
	Off	EE	EE*5 (TAPE)	EE	TAPE	EE

*1 When menu item S06 BVB (PREVIEW MODE) is set to ENABLE, a black signal will be output for the tape section between the IN and OUT points.

*2 The EE signal will be output in all modes while the INPUT button ❽ is held down with menu item I04 INPUT CHECK MODE set to EE.

*3 When menu item I04 INPUT CHECK MODE is set to INP INH, the TAPE (playback) signal will be output in PLAY mode.

*4 When menu item I17 REC CONFI MODE is set to EE, the EE signal will be output in REC or EDIT mode even if the TAPE indicator is on.

*5 When the REC INHIBIT VIDEO switch (on the level control panel) is set to ON or the record-inhibit key of the cassette is in the record-inhibit position, the TAPE (playback) signal will be output.

Audio output selection
(For the ANALOG AUDIO OUT, DIGITAL AUDIO OUT, and MONITOR L/R connectors)

Channel	INPUT button status	TAPE indicator on or off	Operation mode				
			STANDBY off*1	STANDBY on*1	REC/EDIT	PLAY, etc.	PREVIEW (for section between IN and OUT points on recorder)*2
DA-1 to DA-4	Pressed*3, *4	Either	EE	EE (TAPE)*5	EE	TAPE	EE
	Not pressed	On	MUTE	MUTE	EE	TAPE	EE
		Off	EE	EE (TAPE)*5	EE	TAPE	EE
CUE	Pressed*3, *4	Either	EE	EE	EE	TAPE	EE
	Not pressed	Either	TAPE	TAPE	EE	TAPE	EE

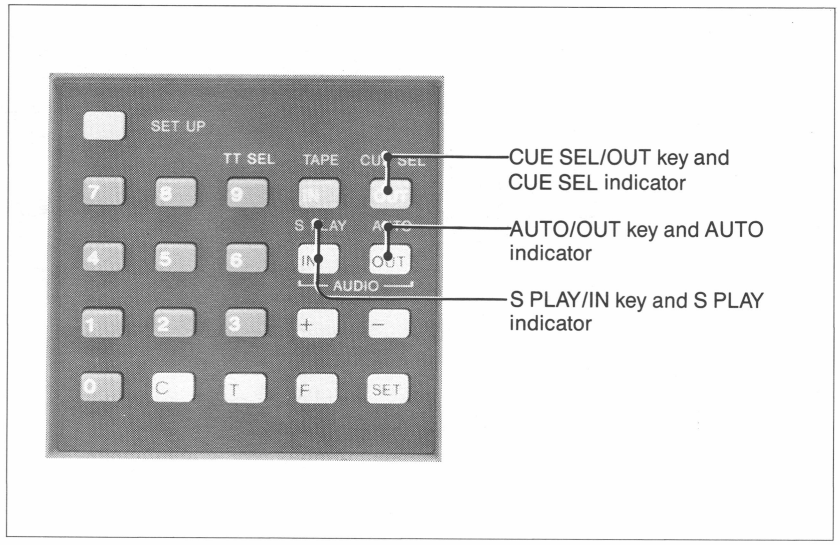
*1 Pressing the INPUT button ❽ in STOP mode while the TAPE indicator is off will set the EE output mode for the TIME CODE OUT connector. Even after the INPUT button is released, the EE output mode will be retained until the operation mode changes, so that the TIME CODE OUT connector will continue outputting the EE signal.

*2 If menu item S06 BVB (PREVIEW MODE) is set to ENABLE, the output will be muted between the IN and OUT points.

*3 The EE signal will be output in all modes while the INPUT button ❽ is held down with menu item I04 INPUT CHECK MODE set to EE.

*4 In all modes, the MONITOR L/R connectors output the INPUT signals and the DA-1 to DA-4 and CUE level meters indicate the INPUT audio signal levels.

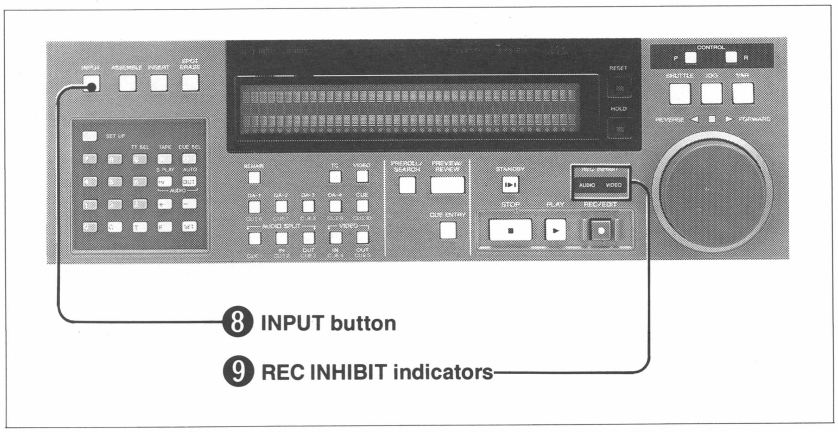
*5 When the REC INHIBIT VIDEO switch (on the level control panel) is set to ON or the record-inhibit key of the cassette is in the record-inhibit position, the TAPE (playback) signal will be output.



CUE SEL (cue selection)/OUT key and CUE SEL indicator
Press the CUE SEL/OUT key to enter CUE ENTRY mode; the CUE SEL indicator will light. In this mode, the AUDIO SPLIT/CUE1-3 buttons ㉓, VIDEO/CUE4-5 buttons ㉒, and channel preset/CUE6-10 buttons ⑱ function as the CUE1-3, CUE4-5, and CUE6-10 buttons, respectively. Using these buttons, you can carry out multi-cue operation. *See Section 3-1-3 "Multi-cue Operations".*
Press the key again to exit CUE ENTRY mode; the CUE SEL indicator will go off and the above buttons will return to their original functions.

S PLAY (synchronized sequential mode on/off)/IN key and S PLAY indicator
Press the S PLAY/IN key to enter the synchronized sequential record/playback mode; the S PLAY indicator will light. *See Section 3-2-2 "Synchronized Sequential Recording Mode" and Section 3-3-6 "Synchronized Sequential Playback Mode".*
Press it again to exit the synchronized sequential record/playback mode, and the S PLAY indicator will go off.

AUTO (automatic editing mode on/off)/OUT key and AUTO indicator
Press the AUTO/OUT key to enter AUTO EDIT mode *(see Section 3-4-2 "Automatic Editing")* or PROGRAM REPEAT playback mode *(see Section 3-3-7 "PROGRAM REPEAT Playback Mode);* the AUTO indicator will light.
Press it again to exit the mode, and the AUTO indicator will go off.



8 INPUT (input select) button

While this button is held down, the video and audio signals indicated for the "INPUT button—pressed" status in the tables on pages 1-28 and 1-29 will be output.

You can also use this button to:

- select the signals whose levels are to be indicated on the DA-1 to DA-4 level meters, and
- determine the type of time code to be displayed in block 1 of the display when the time code is selected by the TT SEL key in the 21-key section.

See Section 3-1-2 "Displaying and Setting the Time Code, User Bits and Timer Data."

Note

While this button is held down with menu item I04 INPUT CHECK MODE set to INPUT, the video signals output from the VIDEO OUT and the VIDEO MONITOR OUT connectors will be of the same component format as that of the input video signal regardless of the setting of menu item I83 OUTPUT MATRIX.

If the input signal selection for the cue channel is digital (with menu item S13 CUE INPUT SELECT set to DIGITAL), this button is not effective for the cue channel.

9 REC INHIBIT indicators (red)

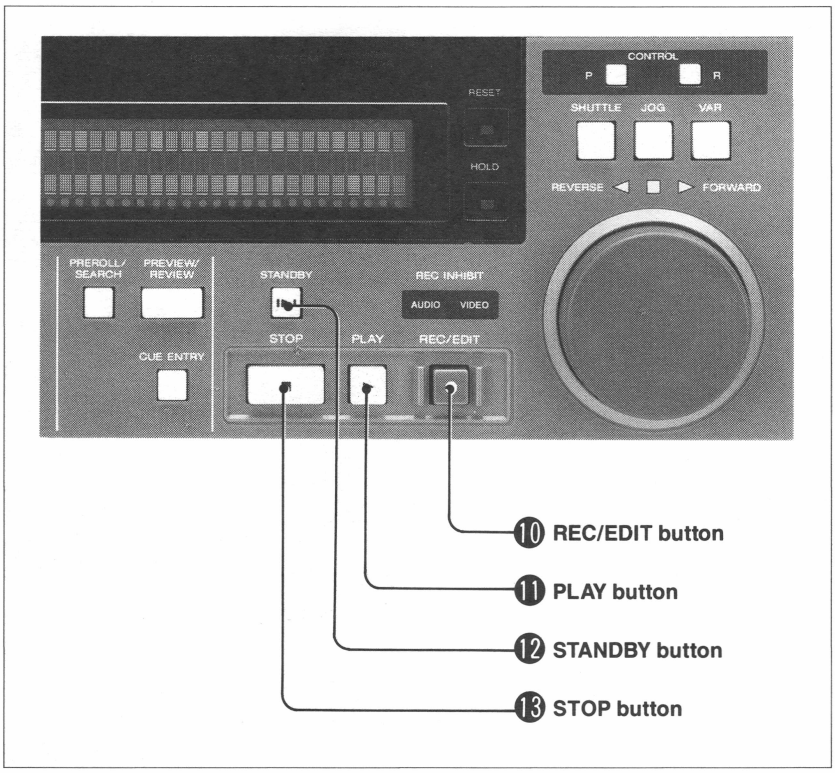
AUDIO indicator

This indicator lights when the REC INHIBIT AUDIO switch (on the level control panel) is set to ON.

VIDEO indicator

This indicator lights when the REC INHIBIT VIDEO switch (on the level control panel) is set to ON.

If a cassette with its record-inhibit key set to the record-inhibit position is loaded, both of the above indicators will light.



⑩ REC/EDIT button

Use this button to start recording, or manual or automatic editing.

To start recording: Press this button and the PLAY button simultaneously while none of the INSERT, ASSEMBLE, and SPOT ERASE buttons is lit.

To start manual editing: Press this button while the following conditions are both met:

- The INSERT, ASSEMBLE, or SPOT ERASE button is lit.
- The servo is locked in PLAY mode.

To start automatic editing: Press this button while the following conditions are all met:

- The INSERT, ASSEMBLE, or SPOT ERASE button is lit.
- The AUTO indicator in the 21-key section ⑦ is lit.
- An IN point has been entered.

⓫ PLAY button

Press this button to enter normal PLAY mode (for normal speed forward playback); this button as well as the STANDBY button will light.

⓬ STANDBY button

This on/off button controls head drum rotation. If it is off, press it to start the head drum rotation, that is, to enter STANDBY on mode. Within a few seconds of entering STANDBY on mode, the head drum will be rotating at normal speed, and the SERVO alarm indicator ❻ will go off, indicating that the unit is ready for immediate operation. Press the button again to exit STANDBY on mode and stop the head drum rotation. You can carry out recording or playback operations without first switching to STANDBY on mode, but then there will be a delay while the head drum gets up to speed.

Notes

- If the head drum rotation is abnormal or if the head drum does not rotate when this button is turned on, the button will flash on and off.
- In STANDBY on mode, the tape automatically advances by one field every five minutes.

⓭ STOP button

Press this button to enter STOP mode. All operation modes of the unit will be reset, the reel motor will be stopped, and the pinch rollers will be released from the tape. In STOP mode, you can obtain a freeze frame picture. *See Section 3-1-5 "Freeze Frames".*
In CUE ENTRY mode, you can erase all cue data by pressing this button and the CUE ENTRY button simultaneously.

Note

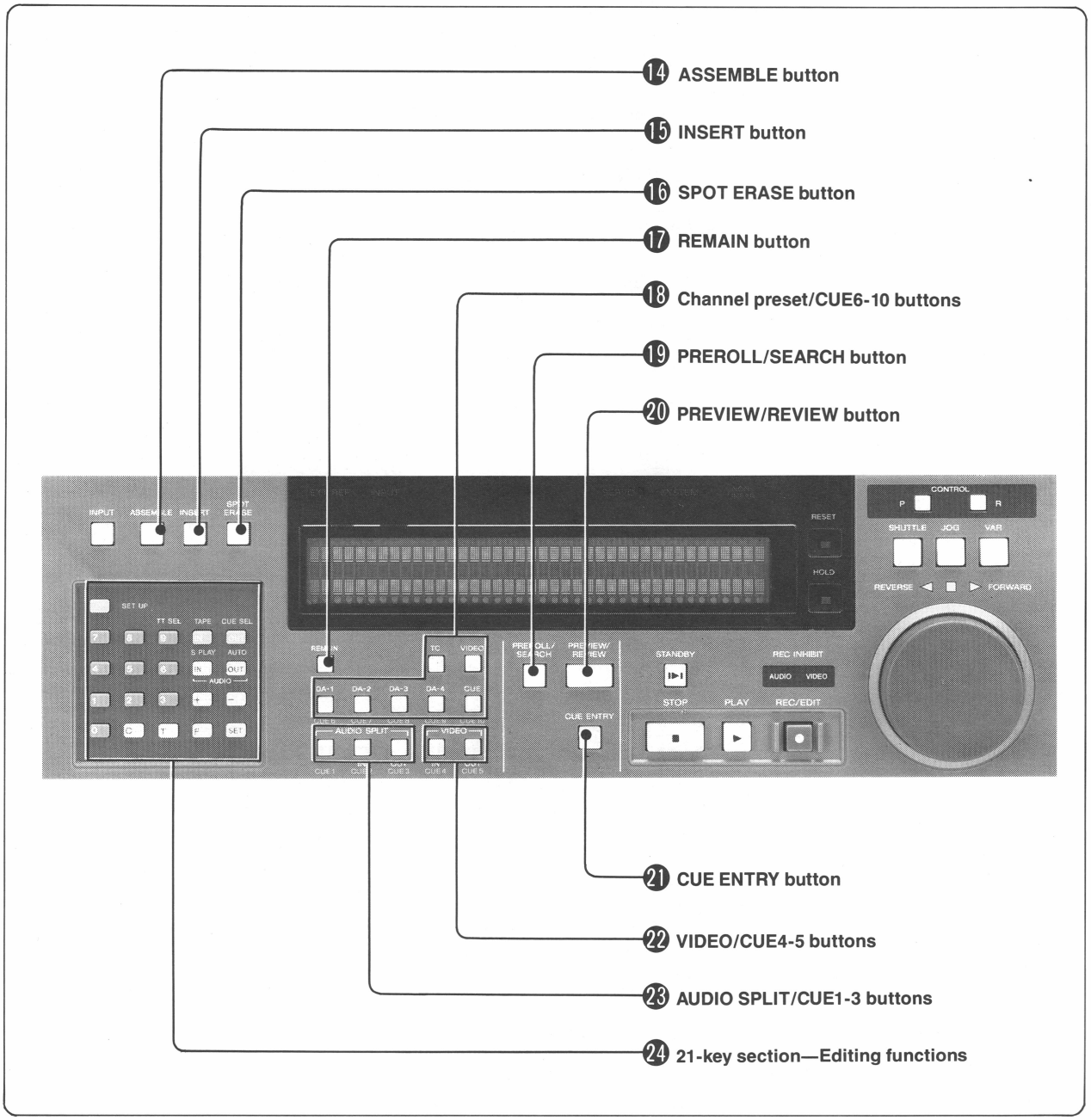
This button will flash on and off if no reference signal is provided for the selected input while menu item S12 REF SELECT is set to EXT REF or INPUT.

Automatic switching from STANDBY on mode to STANDBY off mode

If a specified amount of time passes with the unit remaining in STANDBY on mode without any of its operating buttons pressed, the unit will enter STANDBY off mode automatically. To specify the time allowed to pass before the STANDBY on mode changes to the STANDBY off mode, use menu item I13 STANDBY OFF TIMER. *See Section 1-4-4 "Initial Setup Menu".*

The STANDBY on mode does not change to the STANDBY off mode automatically if the ASSEMBLE or the INSERT button is on or if the AUTO indicator in the 21-key section is lit.

Buttons used for editing and cue operations



⓮ ASSEMBLE button
Press this button in STOP or PLAY mode to enter ASSEMBLE editing mode; all the channel preset buttons ⓲ will light.
Press it again to exit ASSEMBLE editing mode, and the channel preset buttons will go off.

⓯ INSERT button
Press this button in STOP or PLAY mode to enter INSERT editing mode (in this case, the channel preset buttons ⓲ will remain off). After the INSERT editing mode is entered, specify the channel whose signal is to be edited by pressing the corresponding channel preset button. The channel preset button pressed will light. It is possible to change the channel selection during INSERT editing.
Press this button again to exit INSERT editing mode.

⓰ SPOT ERASE button
Press this button to enter SPOT ERASE mode. In SPOT ERASE mode, you can erase a portion of the signal recorded on the audio channel.

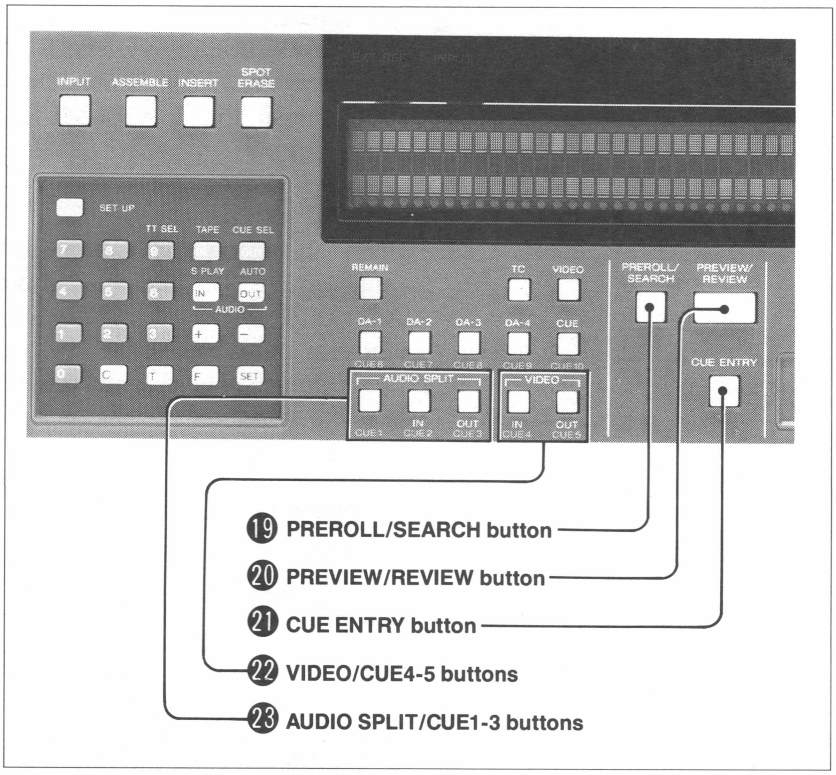
For details, see Section 3-4-2 "Automatic Editing."

⓱ REMAIN (tape remaining) button
When this button is pressed, the time in minutes representing the remaining length of the tape currently loaded will appear in block 1 of the display. (Display example: "REMAIN 60M")
To check the remaining length of a tape immediately after loading it, press this button after running the tape for at least 4 seconds for normal playback.

⓲ Channel preset/CUE6-10 buttons
Use these buttons to select the channel whose signal is to be edited in INSERT editing mode or SPOT ERASE mode.

DA-1 to DA-4:	Select digital audio channels 1-4.
TC:	Selects the time code channel.
CUE:	Selects the cue channel.
VIDEO:	Selects the video channel.

When the CUE SEL indicator in the 21-key section ❼ is lit, you can use these buttons as the CUE6-10 buttons to enter or select cue points 6-10.



⑲ PREROLL/SEARCH button

When the CUE SEL indicator in the 21-key section ❼ is off, you can move the tape to the cue-up point by pressing this button. The cue-up point is determined by the current video IN point and the preroll time preset for editing operation. If you press this button while holding down the IN, OUT, AUDIO IN, or AUDIO OUT key in the 21-key section, the tape will move to the corresponding IN or OUT point. The correspondences between the above keys and the IN and OUT points are as follows:

Keys to be pressed	IN/OUT points selected for cuing
IN key	Video IN point
OUT key	Video OUT point
AUDIO IN key	Audio IN point
AUDIO OUT key	Audio OUT point

When the CUE SEL indicator in the 21-key section ❼ is lit, pressing this button moves the tape to the preroll point, that is, the point preceding the last-entered cue point by the search preroll time.

For details, see Section 3-1-3 "Multi-cue Operations."

⓴ PREVIEW/REVIEW button

Use this button in automatic editing. *See Section 3-4-2 "Automatic Editing".*

This button provides a preview function when the following conditions are met:

- The data necessary for editing has been set.
- The editing is yet to be carried out.

This button provides a review function when the following conditions are met:

- The previous editing has been completed.
- The data necessary for next editing has not been set.

㉑ CUE ENTRY button

When this button is lit, you can enter cue points 1-10 sequentially by pressing it successively.

For details, see Section 3-1-3 "Multi-cue Operations."

㉒ VIDEO (video IN/OUT point entry)/CUE4-5 buttons

When the AUTO indicator in the 21-key section ❼ is lit, you can use these buttons to set the video IN or OUT point to the value shown in block 1 of the display. Use these editing points for prerolling, previewing, automatic editing, reviewing, or PROGRAM REPEAT playback mode. However, the AUTO indicator is turned off, you can use the editing points only for prerolling.

When the CUE SEL indicator in the 21-key section ❼ is lit, these buttons function as the CUE4-5 buttons to enter or select cue points 4-5.

Note

These buttons do not operate during prerolling.

㉓ AUDIO SPLIT/CUE1-3 buttons

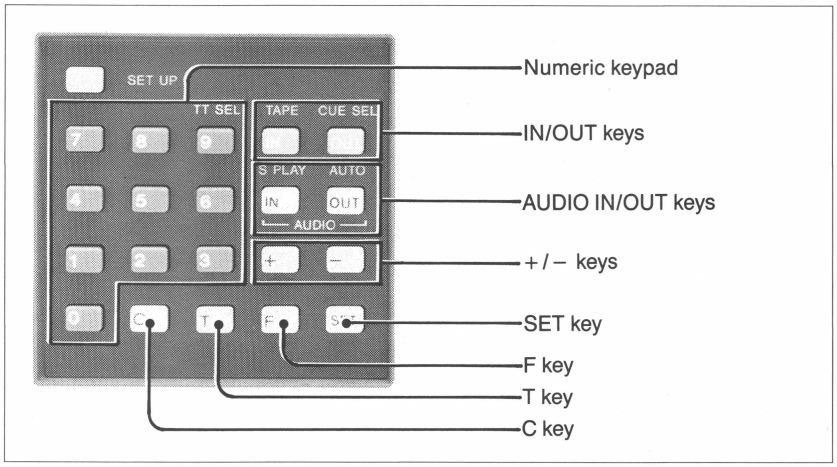
There are three AUDIO SPLIT buttons. Press the left-hand button to enter AUDIO SPLIT mode, in which the audio edit IN and OUT points can be set independently of the video IN and OUT points. The left-hand button lights when in AUDIO SPLIT mode; press it again to exit from the mode.
In AUDIO SPLIT mode, when you press one of the other two buttons, the audio IN or OUT point is set to the value shown in block 1 of the display. You can use these editing points for prerolling, automatic editing, or reviewing.
When the CUE SEL indicator in the 21-key section ❼ is lit, these buttons function as the CUE1-3 buttons to enter or select cue points 1-3.

Note

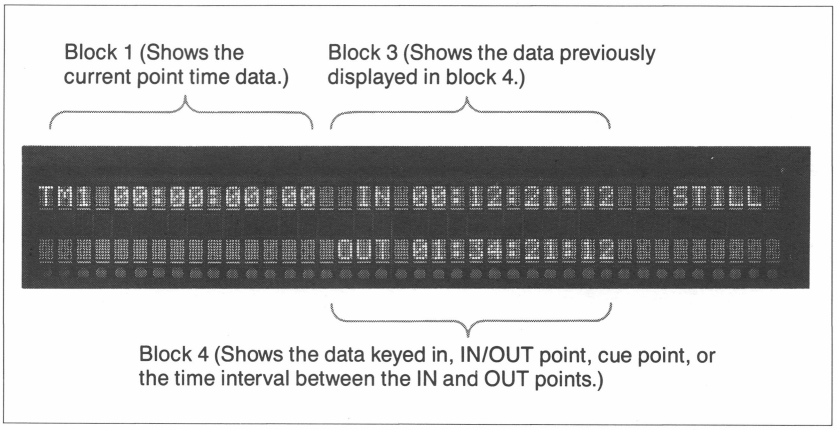
These buttons do not operate during prerolling.

㉔ 21-key section—Editing functions

When the SET UP mode is not selected (the SET UP indicator is off), the keys in the 21-key section can be used for editing operation.



Display for editing operation by the 21 keys


Block 1 (Shows the current point time data.)
Block 3 (Shows the data previously displayed in block 4.)
TM1 00:00:00:00 IN 00:12:21:12 STILL
OUT 01:54:21:12
Block 4 (Shows the data keyed in, IN/OUT point, cue point, or the time interval between the IN and OUT points.)

Numeric keypad
Use this keypad to enter digits into block 4.

F (function) key
Use this key to enter hexadecimal digits as user bit data. To enter hexadecimal digits A to F, press the numeric keys 0 to 5 while holding down this key.

SET key
Use this key to store the numeric data entered in block 4.

C (clear) key
Use this key to erase the numeric data entered in block 4.

+ / − keys

Use these sign keys to add or subtract a desired value to or from the numeric data displayed in block 4. To carry out addition or subtraction, enter the desired value after pressing the + or − key, then press the SET key. The result will appear in block 4.

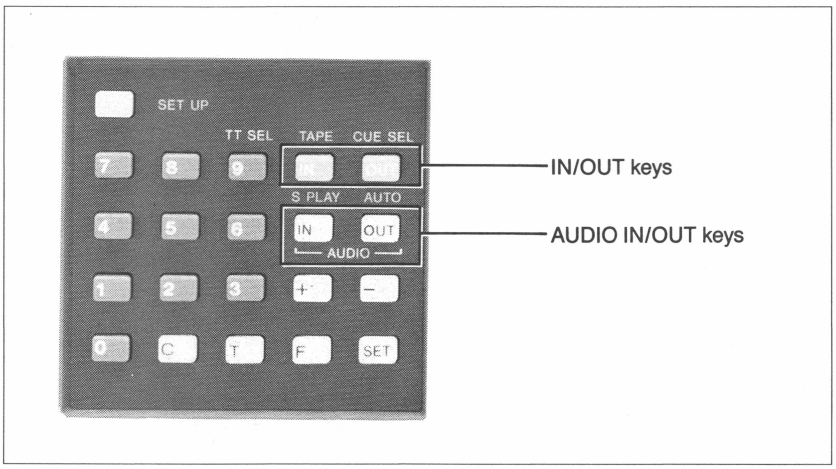
T (time) key

Use this key to shift the data shown in block 4 into block 1 and store it, replacing the data (time code generator or timer-1 data) that has been appearing in block 1.

Note

The data displayed cannot be changed using these keys in either of the following cases:

- Menu item S51 TIME CODE SOURCE is set to EXT.
- Menu item S55 TC REGEN/PRESET SEL or S56 UB REGEN/PRESET SEL is set to REGEN.



IN/OUT (IN point/OUT point) keys
These keys have the following three functions:

- **Recalling IN/OUT points**

Press the IN (or OUT) key to recall the stored IN (or OUT) point data into block 4.

- **Entering IN/OUT points**

When the data entered in block 4 has been stored by pressing the SET key, press the IN (or OUT) key to enter the data as the IN (or OUT) point. You can trim the IN/OUT point data shown in block 4 in frames. *See "Recalling and modifying IN and OUT points" on page 3-39.* The trimmed data appears in block 4.

- **Displaying the editing interval**

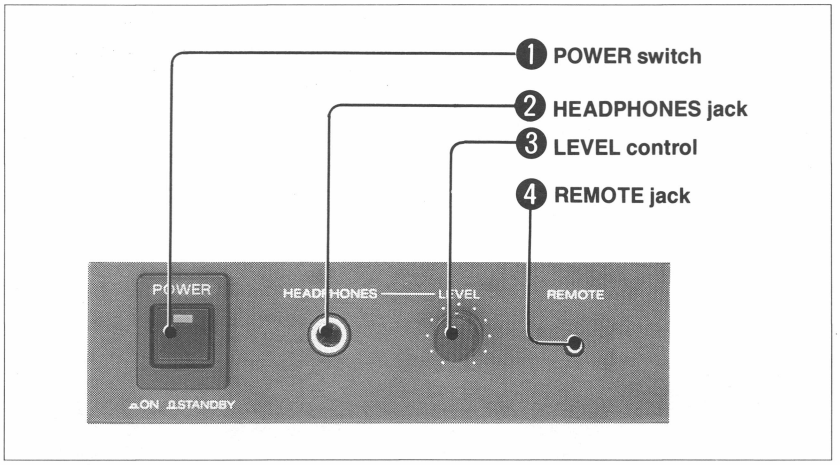
When the IN and OUT keys are pressed together, the editing interval (time interval between the IN and OUT points) based on timer 1, timer 2, or the time code will appear in block 4. When the data displayed is based on timer 1 or the time code, it is preceded by "DUR". When it is based on timer 2, "LAP" precedes it.

AUDIO IN/OUT (IN point/OUT point) keys
Use these keys to set the audio IN/OUT points in AUDIO SPLIT mode. Like the IN/OUT keys, the AUDIO IN/OUT keys have the following three functions:

- **Recalling audio IN/OUT points**
- **Entering audio IN/OUT points**
- **Displaying the editing interval**

To select the audio channel to be the target of the functions of these keys, press the corresponding channel preset button ⑱.
For the editing-interval display, you may press any pair of the four keys: IN/OUT keys and AUDIO IN/OUT keys. For example, if you press the IN key and the AUDIO OUT key together, the time interval between the video IN and the audio OUT points will appear in block 4.

1-3-3. Power Switch and Jack Section



1 POWER switch
Push in this switch to turn the unit on; the switch will light green. To turn the unit off, release the switch by pushing it again; it will change to red (unless the BREAKER switch on the connector panel is turned off, the internal power supply unit maintains the unit in a standby state).

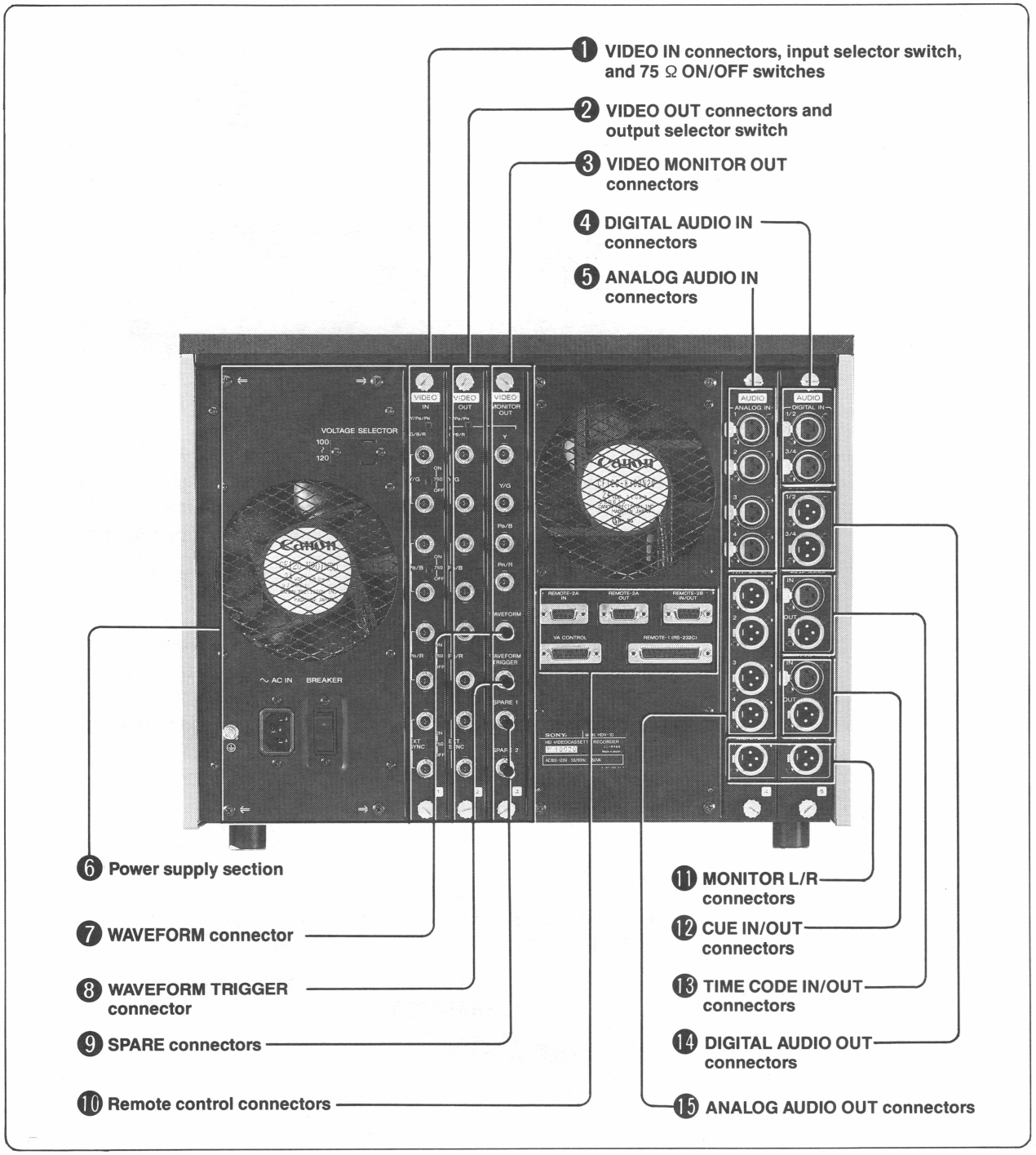
2 HEADPHONES jack
Connect stereo headphones to monitor the audio output signal selected by the MONITOR SELECT buttons on the level control panel.
The connection of the stereo headphones to this jack does not affect the output of audio signals to the MONITOR L/R connectors.

3 LEVEL (headphone output level) control
Use this control to adjust the sound volume of the stereo headphones.

4 REMOTE (simple remote control) jack (for SIRCS)
Connect the optional remote control unit RM-770.

For the remote control by the use of the RM-770, see Section 3-5-2 "Remote Control by RM-770 Remote Control Unit."

1-3-4. Connector Panel


1 VIDEO IN connectors, input selector switch, and 75 Ω ON/OFF switches
2 VIDEO OUT connectors and output selector switch
3 VIDEO MONITOR OUT connectors
4 DIGITAL AUDIO IN connectors
5 ANALOG AUDIO IN connectors
6 Power supply section
7 WAVEFORM connector
8 WAVEFORM TRIGGER connector
9 SPARE connectors
10 Remote control connectors
11 MONITOR L/R connectors
12 CUE IN/OUT connectors
13 TIME CODE IN/OUT connectors
14 DIGITAL AUDIO OUT connectors
15 ANALOG AUDIO OUT connectors

❶ **VIDEO IN connectors** (BNC), input selector switch, and 75 Ω ON/OFF switches

There are four pairs of these connectors labeled Y/G, P_B/B, P_R/R and EXT SYNC with each pair being loop through. They input the video signals comprising either the G, B and R signals or the Y, P_B and P_R signals, and the synchronizing signal. Set menu item I81 INPUT MATRIX appropriately depending on the signals to be input. When menu item I81 is set to R PANEL, you can switch between G-B-R and Y-P_B-P_R using the input selector switch located above these connectors.

To terminate each input signal, set the 75 Ω ON/OFF switch located beside each pair of the connectors to ON.

❷ **VIDEO OUT connectors** (BNC) and output selector switch

There are four pairs of these connectors labeled Y/G, P_B/B, P_R/R and EXT SYNC. They output the video signals comprising either the G, B and R signals or the Y, P_B and P_R signals, and the synchronizing signal. Set menu item I83 OUTPUT MATRIX appropriately depending on the signals to be output. When menu item I83 is set to R PANEL, you can switch between G-B-R and Y-P_B-P_R using the output selector switch located above these connectors. While you hold down the INPUT button on the function control panel, these connectors output the signals input to the VIDEO IN connectors ❶ (either the EE signals or the input signals). In this case, which of the EE signals and the input signals will be output is determined by the setting of menu item I04 INPUT CHECK MODE.

❸ **VIDEO MONITOR OUT connectors** (BNC)

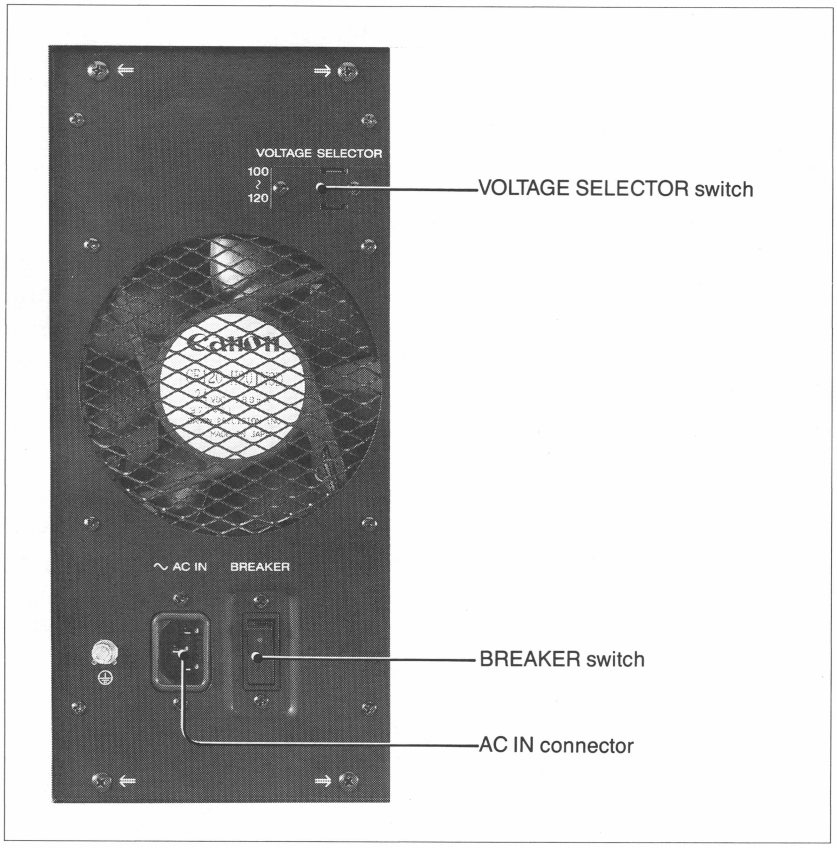
There are four of these connectors labeled Y, Y/G, P_B/B and P_R/R. They output the video signals for picture monitoring. The signals to be output are usually determined by the setting of menu item I83 OUTPUT MATRIX or by the setting of the output selector switch located above the VIDEO OUT connectors ❷, except that the Y connector always outputs the Y signal. While you hold down the INPUT button on the function control panel, these connectors output the signals input to the VIDEO IN connectors ❶. In this case, the input signals may be output unchanged or as the EE signals depending on the setting of menu item I04 INPUT CHECK MODE.

❹ **DIGITAL AUDIO IN connectors** (XLR 3-pin)

These connectors input the digital audio signals in the AES/EBU format. The upper one labeled 1/2 inputs the signals for channels DA-1 and DA-2, and the lower one labeled 3/4 for channels DA-3 and DA-4.

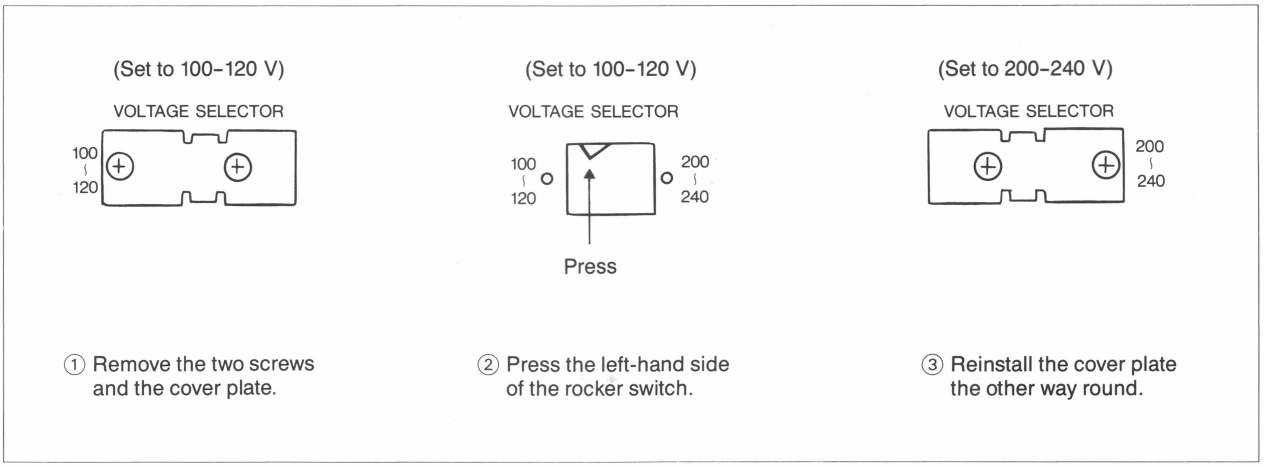
❺ ANALOG AUDIO IN connectors (XLR 3-pin)
These four connectors input the analog audio signals. From the top down, they are labeled 1 to 4, corresponding to channels DA-1 to DA-4.

❻ Power supply section



VOLTAGE SELECTOR (supply voltage selector) switch
Select either 100–120 V or 200–240 V with this switch according to the supply voltage connected to the AC IN connector.
Remove the cover plate to access the rocker switch which faces downward. To change the setting, push up the end of the switch next to the desired voltage indication, then replace the cover plate in the opposite orientation. The cover plate is designed so that it can only be fitted to show the current setting as illustrated on the next page.

To change the setting from 100–120 V to 220–240 V



Note

"200–240 V" is not shown on the voltage selector of the HDV-10 units shipped to USA/Canada, but these units can also operate on 200–240 V AC.

WARNING: Changing the voltage selector setting may require the use of a different line cord or attachment plug, or both. To reduce the risk of fire or electric shock, refer servicing to qualified Sony service personnel.

BREAKER switch

This is a rocker switch which automatically trips to cut off the power supply if an overcurrent flows in the power supply unit. You can also use it to turn the power supply unit on and off manually. It is on when its top end is depressed.

Note

Avoid turning the switch on and off repeatedly in a short interval. When it is turned off, wait at least 10 seconds before turning it on again.

AC IN (AC power input) connector

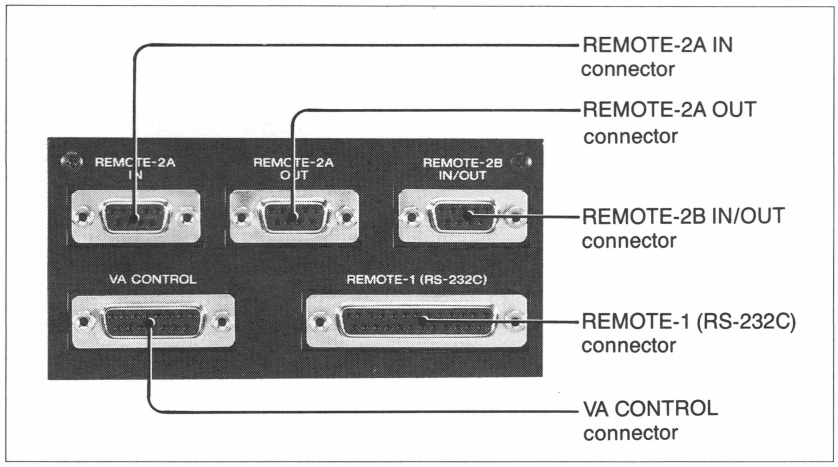
Connect the AC power supply to this connector using the AC power cord supplied.

❼ **WAVEFORM connector** (BNC)
This connector outputs the video signal selected for use in troubleshooting. You can select the signal to be output from among the video input signals, video output signals, TCI (time compressed integration) recording signals, TCI playback signals, CTL signal, and the RF envelope signal of each head. For selection, use menu item S03 WFM SELECT or T02 WFM TEST SELECT.

❽ **WAVEFORM TRIGGER connector** (BNC)
This connector outputs the synchronizing signal for input to a waveform monitor. Usually, the signal to be output is selected automatically according to the signal output to the WAVEFORM connector ❼, but you can also specify it with menu item T03 WFM TRIGGER SELECT.

❾ **SPARE connectors** 1–2 (BNC)
These connectors are reserved for future use.

❿ **Remote control connectors**



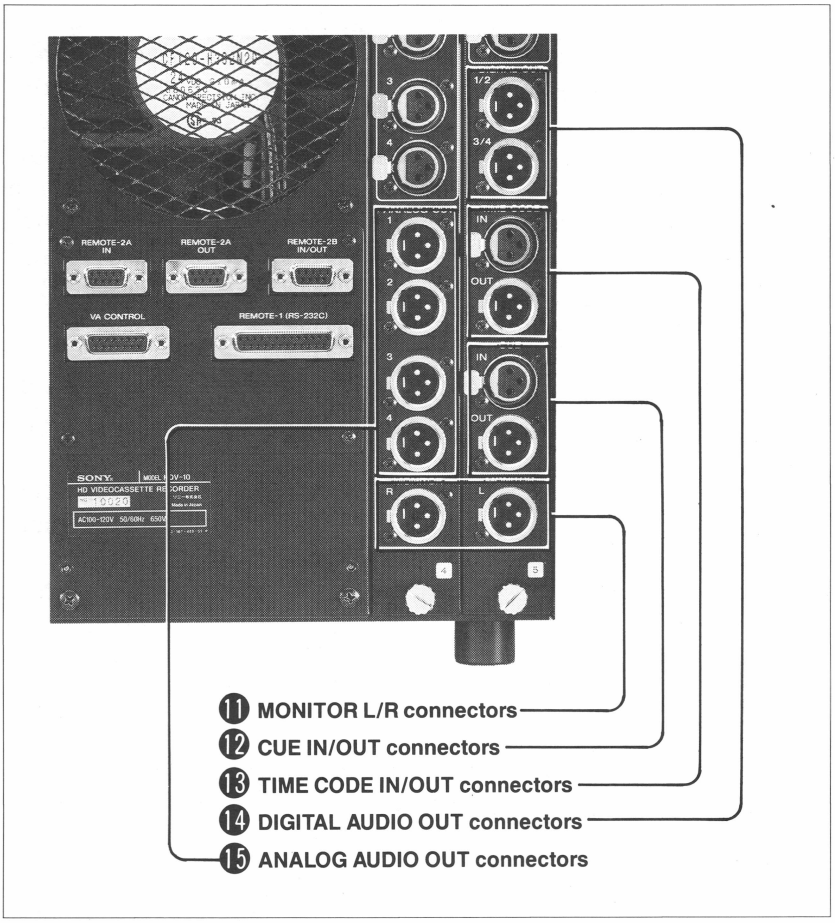
REMOTE-2A IN, REMOTE-2A OUT connectors (D-SUB 9-pin)
These are a pair of loop-through input and output connectors used as 9-pin serial interfaces for remote control. Equipment such as a VTR, an editor, or a remote controller may be connected to these connectors via the RCC-5G/10G/30G 9-pin serial remote control cable or an equivalent. You may use these connectors to bridge-connect remote control signals. To use them, set menu item S01 REMOTE SELECT to RM2A.

REMOTE-2B IN/OUT connector (D-SUB 9-pin)
This connector is used as a 9-pin serial interface for remote control. The use of this connector is the same as that of the REMOTE-2A IN and REMOTE-2A OUT connectors, except for the bridge connection. It serves as an input connector when the REMOTE/LOCAL switch on the level control panel is set to REMOTE or as an output connector when the REMOTE/LOCAL switch is set to LOCAL. To use this connector, set menu item S01 REMOTE SELECT to RM2B.

Note
You cannot use the REMOTE-2A IN and REMOTE-2A OUT connectors and the REMOTE-2B connector at the same time.

REMOTE-1 (RS-232C) input connector (D-SUB 25-pin)
This connector inputs the remote control signals. Use this to connect a personal computer, etc. To use this connector for remote control operation, select RM1 in MENU S01 REMOTE SELECT.

VA CONTROL connector (D-SUB 15-pin)
This connector is reserved for future use.



⓫ **MONITOR L/R (monitor output L/R) connectors** (XLR 3-pin)
These connectors output the audio signals for monitoring. You can select the audio channels to be monitored with the MONITOR SELECT buttons on the level control panel.

⓬ **CUE IN/OUT connectors** (XLR 3-pin)
The CUE IN connector inputs the audio signal to be recorded on the cue channel. To record an external audio signal on the cue channel, set menu item S13 CUE INPUT SELECT to either LINE or MIC. The CUE OUT connector outputs the audio signal from the cue channel

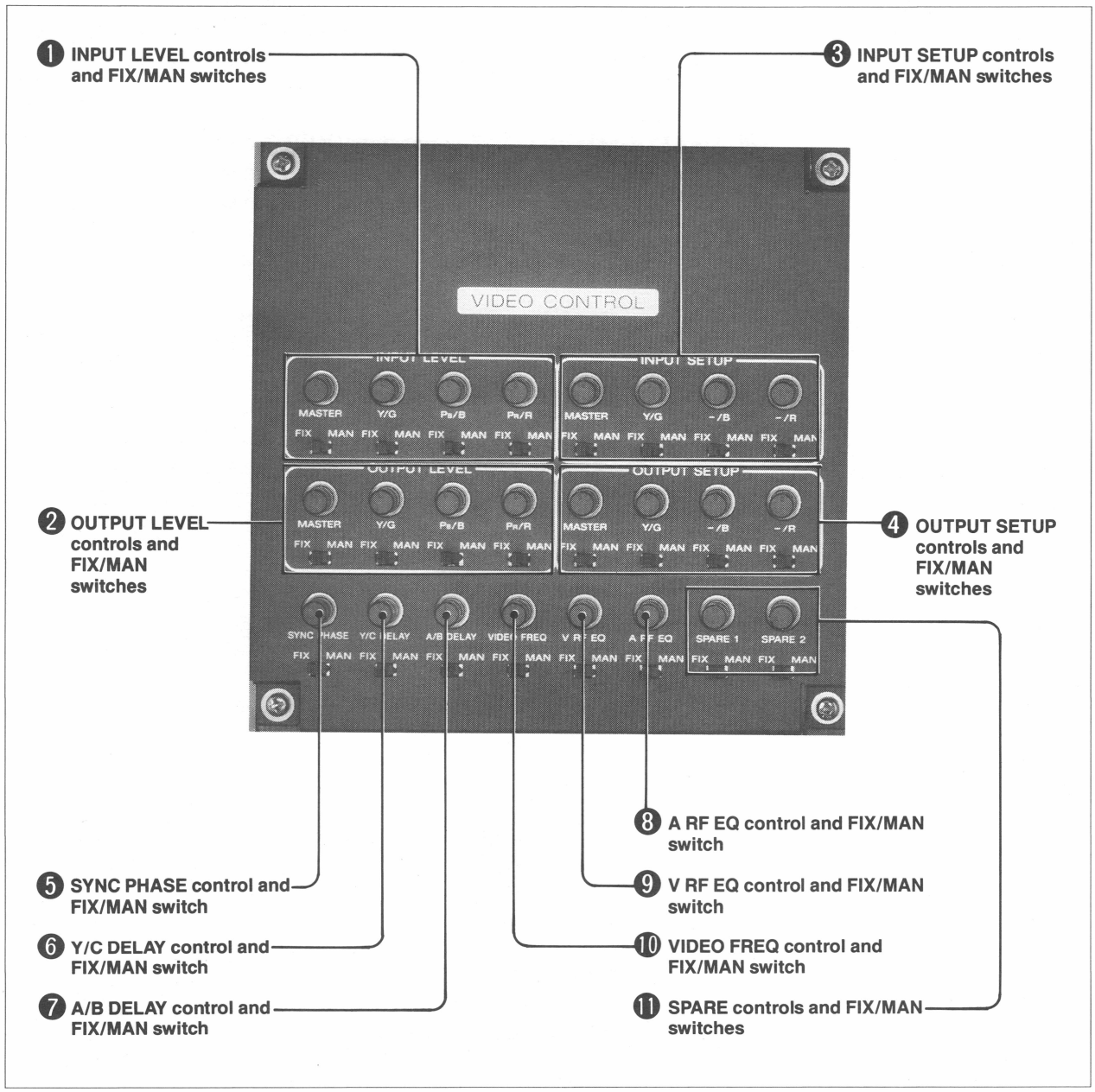
⓭ **TIME CODE IN/OUT connectors** (XLR 3-pin)
These connectors are used to connect a pair of external time code generator and reader. To use an external time code source, set menu item S51 TIME CODE SOURCE to EXT.

⓮ **DIGITAL AUDIO OUT connectors** (XLR 3-pin)
These connectors output the digital audio signals in the AES/EBU format. The upper one labeled 1/2 outputs the signals from channels DA-1 and DA-2, and the lower one labeled 3/4 from channels DA-3 and DA-4.

⓯ **ANALOG AUDIO OUT connectors** (XLR 3-pin)
These four connectors output the analog audio signals. From the top down, they are labeled 1 to 4, corresponding to channels DA-1 to DA-4.

1-3-5. Video Control Panel

The video control panel is located behind the function control panel. To use it, first open the function control panel. *See Section 2-4 "Positioning the Function Control Panel."*


1 INPUT LEVEL controls and FIX/MAN switches
3 INPUT SETUP controls and FIX/MAN switches
VIDEO CONTROL
INPUT LEVEL
INPUT SETUP
MASTER Y/G PB/B PR/R
MASTER Y/G -/B -/R
FIX MAN
OUTPUT LEVEL
OUTPUT SETUP
2 OUTPUT LEVEL controls and FIX/MAN switches
4 OUTPUT SETUP controls and FIX/MAN switches
SPARE 1
SPARE 2
5 SYNC PHASE control and FIX/MAN switch
6 Y/C DELAY control and FIX/MAN switch
7 A/B DELAY control and FIX/MAN switch
8 A RF EQ control and FIX/MAN switch
9 V RF EQ control and FIX/MAN switch
10 VIDEO FREQ control and FIX/MAN switch
11 SPARE controls and FIX/MAN switches

❶ **INPUT LEVEL (input video level) controls and FIX/MAN (fixed/manual control) switches**

There are four of these controls labeled MASTER, Y/G, P_B/B and P_R/R. You can use them to adjust the input video levels when the FIX/MAN switches below them are set to MAN. The adjustable range is ±2 dB relative to the corresponding input level when menu item E08 INPUT VIDEO AGC is set to DISABLE or 1 Vp-p ±1 dB when E08 is set to ENABLE. The signals on which they operate are as follows:

MASTER: G-B-R or Y-P_B/B-P_R/R
Y/G: G or Y
P_B/B: B or P_B/B
P_R/R: R or P_R/R

For selection between G-B-R and Y-P_B/B-P_R/R, use the input selector switch for the VIDEO IN connectors on the connector panel or menu item I81 INPUT MATRIX.

When the corresponding FIX/MAN switches are set to FIX, these controls have no effect. In this case, the input video levels are either fixed or adjusted automatically depending on the setting of menu item E08 INPUT VIDEO AGC as follows:

When menu item E08 is set to DISABLE: the input video levels are fixed at a gain of 0 dB.
When menu item E08 is set to ENABLE: the input video levels are adjusted to 1 Vp-p automatically.

❷ **OUTPUT LEVEL (output video level) controls and FIX/MAN (fixed/manual control) switches**

There are four of these controls labeled MASTER, Y/G, P_B/B and P_R/R. You can use them to adjust the output video levels when the FIX/MAN switches below them are set to MAN. The adjustable range is ±0.1 V. The signals on which they operate are as follows:

MASTER: G-B-R or Y-P_B/B-P_R/R
Y/G: G or Y
P_B/B: B or P_B/B
P_R/R: R or P_R/R

For selection between G-B-R and Y-P_B/B-P_R/R, use the output selector switch for the VIDEO OUT connectors on the connector panel or menu item I83 OUTPUT MATRIX. When the corresponding FIX/MAN switches are set to FIX, these controls have no effect.

❸ **INPUT SETUP (input video setup) controls and FIX/MAN (fixed/manual control) switches**

There are four of these controls labeled MASTER, Y/G, −/B and −/R. You can use them to adjust the input video setup levels when the FIX/MAN switches below them are set to MAN. The adjustable range is ±0.07 V relative to the input video levels. The video signals for which the input setup levels can be adjusted with these controls are as follows:

MASTER: G-B-R or Y
Y/G: G or Y
−/B: B (with G-B-R selected)
−/R: R (with G-B-R selected)

These controls comply automatically with the selection between G-B-R and Y-P_B/B-P_R/R made for the INPUT LEVEL controls ❶. When the corresponding FIX/MAN switches are set to FIX, they have no effect.

❹ **OUTPUT SETUP (output video setup) controls and FIX/MAN (fixed/manual control) switches**

There are four of these controls labeled MASTER, Y/G, −/B and −/R. You can use them to adjust the output video setup levels when the FIX/MAN switches below them are set to MAN. The adjustable range is ±0.07 V relative to the output video levels. The video signals for which the output setup levels can be adjusted with these controls are as follows:

MASTER: G-B-R or Y
Y/G: G or Y
−/B: B (with G-B-R selected)
−/R: R (with G-B-R selected)

These controls comply automatically with the selection between G-B-R and Y-P_B/B-P_R/R made for the OUTPUT LEVEL controls ❷.
When the corresponding FIX/MAN switches are set to FIX, they have no effect.

❺ SYNC PHASE (output sync phase) control and FIX/MAN (fixed/manual control) switch
When the FIX/MAN switch below this control is set to MAN, you can use this control to adjust the output video phase in the range of −300 ns to +600 ns relative to the input video phase.
When the FIX/MAN switch is set to FIX, this control has no effect. In this case, the output video signals are kept in phase with the input video signals.

❻ Y/C DELAY (output luminance/chroma phase difference) control and FIX/MAN (fixed/manual control) switch
When the FIX/MAN switch below this control is set to MAN, you can use this control to adjust the phase difference between the output video luminance and chroma signals in the range of ±30 ns.
When the FIX/MAN switch is set to FIX, this control has no effect. In this case, the phase difference between the two signals is kept in the range of ±5 ns.

❼ A/B DELAY (line phase difference) control and FIX/MAN (fixed/manual control) switch
When the FIX/MAN switch below this control is set to MAN, you can use this control to adjust the phase difference between the two output video lines in the range of ±10 ns.
When the FIX/MAN switch is set to FIX, this control has no effect. In this case, the phase difference between the two lines is kept in the range of ±5 ns.

❽ A RF EQ (audio playback RF response) control and FIX/MAN (fixed/manual control) switch
When the FIX/MAN switch below this control is set to MAN, you can use this control to adjust the audio playback RF response in the range of ±3 dB. If the digital audio error rate is too high, adjust this control.
When the FIX/MAN switch is set to FIX, this control has no effect.

❾ V RF EQ (playback video RF response) control and FIX/MAN (fixed/manual control) switch
If you notice over-modulation during playback, reduce it by turning this control.
When the FIX/MAN switch is set to FIX, this control has no effect.

❿ VIDEO FREQ (video frequency response) control and FIX/MAN (fixed/manual control) switch
Keep this control set to FIX.

⓫ SPARE controls and FIX/MAN (fixed/manual control) switches
These controls are reserved for future use or for use by service personnel.

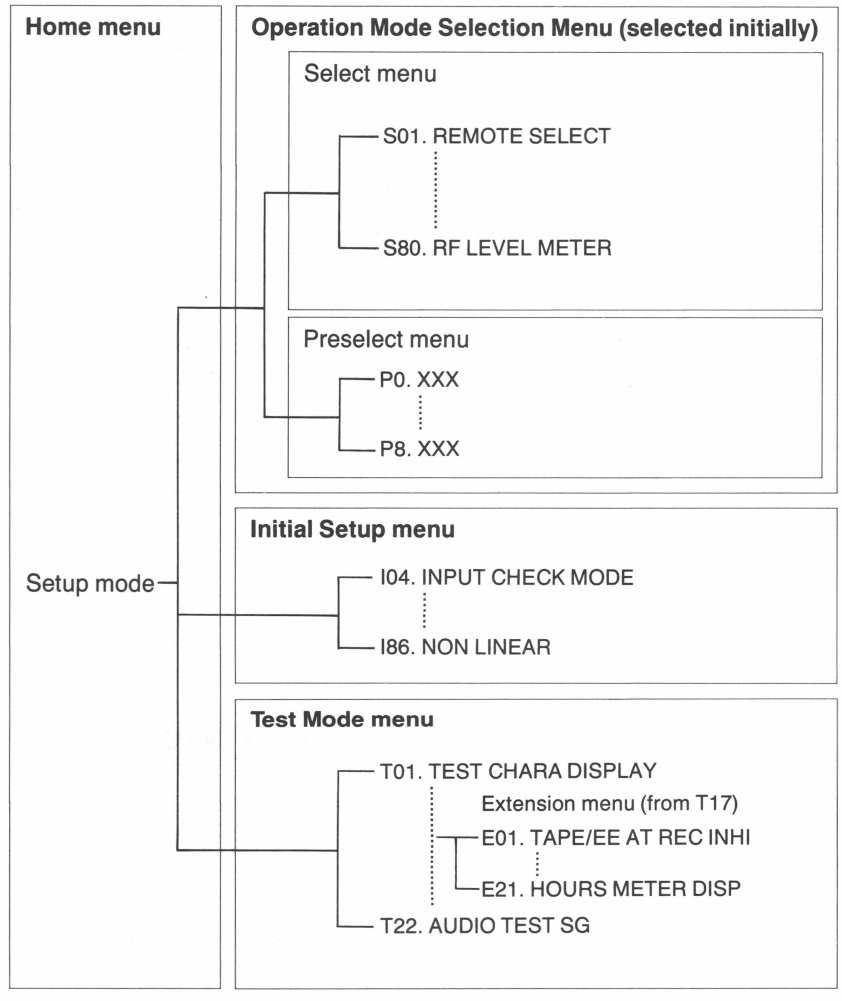
1-4. Menus

The menu system allows all set-up operations to be carried out with the keys in the 21-key section on the function control panel. While the menu system is in use, all necessary information—including the number and name of the current menu item ("menu items" may subsequently be referred to simply as "items") and the current setting—is displayed on the function control panel.

The unit uses PROM and non-volatile RAM (NOVRAM) to hold the initial settings and user settings.

1-4-1. Menu Organization

The principal menus are the Home menu, the Operation Mode Selection menu, the Initial Setup menu, and the Test Mode menu, as shown in the figure below.



Menu organization

The Operation Mode Selection menu, used principally for setting up the unit, is selected automatically when you enter SET UP mode. It is divided into two portions, the Select menu, and the Preselect menu which gives single keystroke access to the most frequently used items. You can change the settings assigned to the Preselect menu at any time.

To select the Initial Setup menu or Test Mode menu, first return to the Home menu.

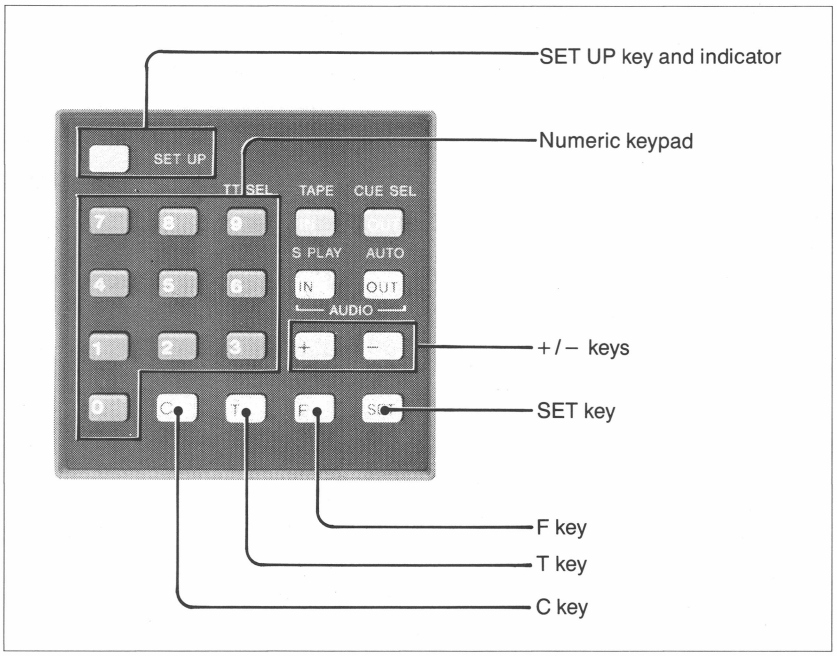
To get to the Home menu, press the C key as many times as is necessary; when you reach the Home menu, the message "SET UP MODE" will appear on the function control panel. Note the Extension menu, which is reached by selecting EXTEND from the T17 MAINTENANCE menu.

Note that some of the menus include settings which you have to make when installing the unit.

1-4-2. Menu Operations

Menu operating functions of the 21-key section

All menu selections are made from this section.



Keys used for menu operations

SET UP key and indicator
Pressing this key puts the unit into the SET UP mode. The Operation Mode Selection menu will be automatically selected, and the SET UP indicator will start flashing. In SET UP mode, use the keys in this section for menu selections. Pressing the SET UP key again ends the SET UP mode, and the indicator will stop flashing.

Numeric keypad
Use this keypad for menu selection, and entering numeric values.

+ / – keys
Use these keys to increment or decrement the current menu item selection. You can also use the search dial in place of these keys.

SET key
Use this key to confirm a selected item or entered value. In the Operation Mode Selection menu, pressing it enters the Select menu.

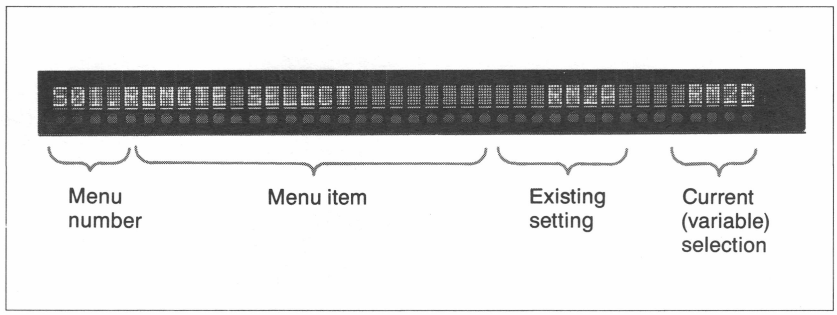
F key
Use this key to allocate functions to the Preselect menu.

T key
Use this key to transfer set-up data between RAM and PROM or non-volatile RAM (NOVRAM).

C key
Use this key to get to the Home menu. You can also use it to go back one step during menu operations.

Menu display format

The current menu item is shown on the second line of the function control panel display, in the following format:



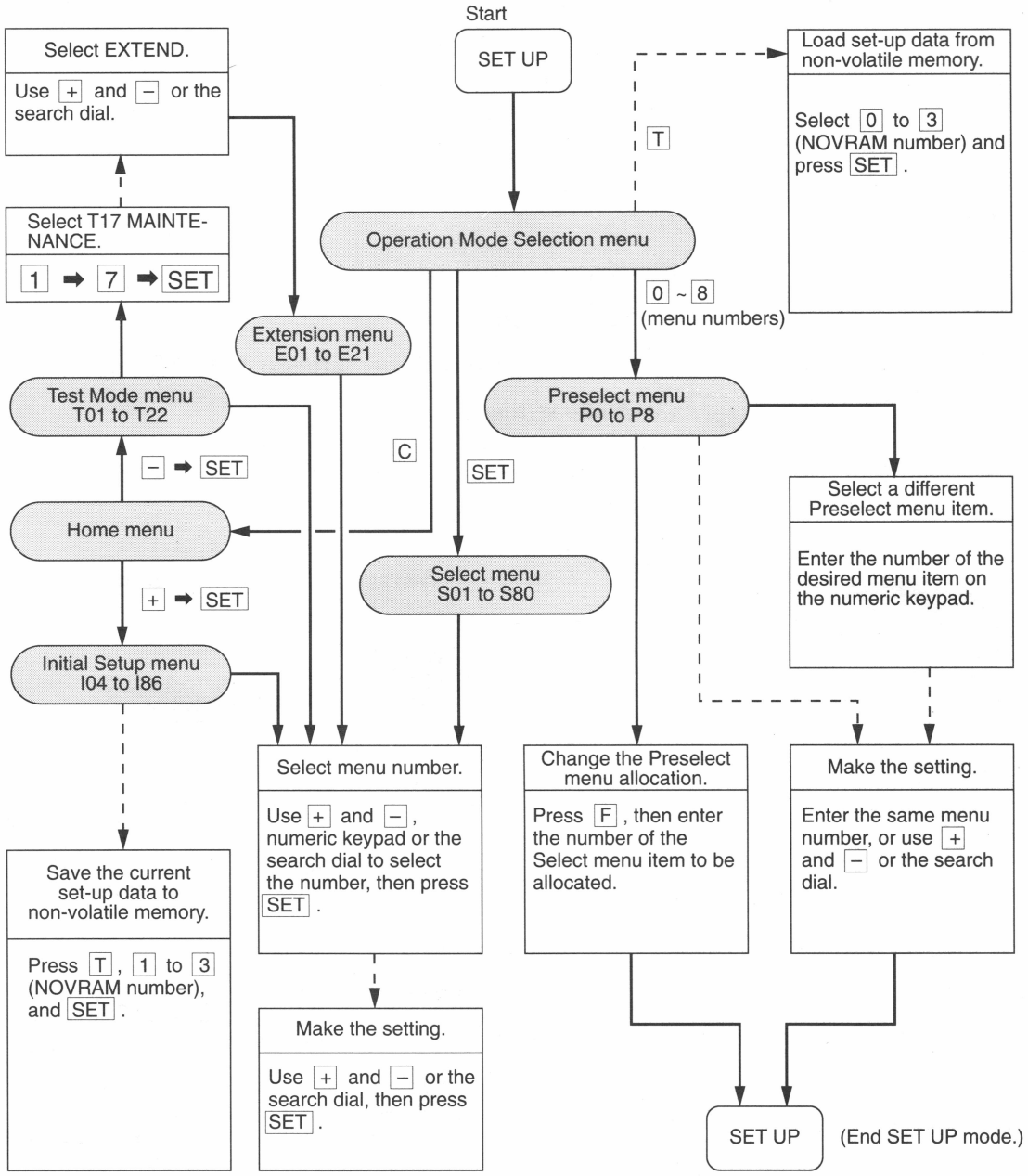
Menu display format

The letter in the menu number shows which of the main menus it comes from: S = Select menu, P = Preselect menu, I = Initial Setup menu, T = Test Mode menu, E = Extension menu.

The cursor appears under the menu number or current selection to indicate that it may be changed. Press the SET key to confirm the selection as replacing the existing setting.

Various other messages are displayed as required in place of the menu display.

Overall flowchart for menu operation


Start
SET UP
Select EXTEND.
Use + and − or the search dial.
Select T17 MAINTE-NANCE.
1 ➡ 7 ➡ SET
Load set-up data from non-volatile memory.
Select 0 to 3 (NOVRAM number) and press SET .
T
Operation Mode Selection menu
0 ~ 8 (menu numbers)
Extension menu E01 to E21
Test Mode menu T01 to T22
Preselect menu P0 to P8
C
SET
− ➡ SET
Home menu
Select a different Preselect menu item.
Enter the number of the desired menu item on the numeric keypad.
Select menu S01 to S80
+ ➡ SET
Initial Setup menu I04 to I86
Select menu number.
Use + and −, numeric keypad or the search dial to select the number, then press SET .
Change the Preselect menu allocation.
Press F , then enter the number of the Select menu item to be allocated.
Make the setting.
Enter the same menu number, or use + and − or the search dial.
Save the current set-up data to non-volatile memory.
Press T , 1 to 3 (NOVRAM number), and SET .
Make the setting.
Use + and − or the search dial, then press SET .
SET UP
(End SET UP mode.)

- indicates a menu.
- indicates user operation.
- —— shows the sequence of menu selections.
- – – – shows a setting to be made from a menu.
- [ ] indicates a key (e.g., [C] is the C key).
- Press [C] to go back one step in this flowchart. (This only works until you press [SET] to confirm a setting.)
- Press [SET UP] to exit SET UP mode at any point.

1-4-3. Operation Mode Selection Menu

This menu includes those set-up items which you are likely to want to change during operation of the unit. It is divided into the Select menu and the Preselect menu. The Preselect menu gives single keystroke access to the most frequently used items.

Select menu

The Select menu includes the following items.

(1) System settings: S01–S15

(2) Time code and character settings: S51–S59

(3) Audio settings: S70–S80

In the table, the default value is indicated by a box around the setting.

Menu number	Item	Settings	Details
(1) System settings			
S01.	REMOTE SELECT	RM1 [RM2A] RM2B RM3	Selects the REMOTE connector to be used. RM1: REMOTE-1 (RS-232C) connector for RS-232C interface. RM2A: REMOTE-2A IN/REMOTE-2A OUT connector for Sony 9-pin remote control (with loop-through) RM2B: REMOTE-2B IN/OUT connector for Sony 9-pin remote control (without loop-through) RM3: Remote control connector (SIRCS) for remote controller RM-770
S03.	WFM SELECT	[IN Y/G] IN PB/B IN PR/R TCI A TCI B DEM A DEM B OUT Y/G OUTPB/B OUTPR/R V ENV A V ENV B A ENV A A ENV B CTL	Selects the video signal to be output from the WAVEFORM connector when menu item T02 WFM TEST SELECT is set to OFF. IN Y/G: Video input signal Y/G IN PB/B: Video input signal P_B/B IN PR/R: Video input signal P_R/R TCI A: TCI recording signal channel A TCI B: TCI recording signal channel B DEM A: TCI playback signal channel A DEM B: TCI playback signal channel B OUT Y/G: Video output signal Y/G OUTPB/B: Video output signal P_B/B OUTPR/R: Video output signal P_R/R V ENV A: Video RF envelope channel A V ENV B: Video RF envelope channel B A ENV A: Audio RF envelope channel A A ENV B: Audio RF envelope channel B CTL: Playback CTL pulse signal

Menu number	Item	Settings	Details
S04.	FREEZE MODE	[DISABLE] FIELD1 FIELD2 FRAME PROG F1 PROG F2 PROG FR	Selects whether the freeze picture is sent from the VIDEO OUT 1/2 connectors when the TAPE lamp in the 21-key section is lit. However, when you press the HOLD button, the freeze picture is always sent regardless of the TAPE lamp status. DISABLE: The freeze picture is not sent. FIELD1, FIELD2, FRAME: The freeze picture of the field 1/field 2/frame wil be sent when you press the STOP button or the HOLD button in PLAY mode. However, the freeze picture of the field at that time will be sent when: • you press the STOP button or the HOLD button in SLOW/STILL mode, or • the STILL mode is automatically terminated. PROG F1, PROG F2, PROG FR: The program freeze mode is selected. The value of the IN point with one frame added is automatically set as the OUT point when you specify the IN point while the AUTO lamp is lit. At the same time, the freeze picture of the field 1/field 2/frame will be sent when the tape reaches the IN point when you press the PREVIEW button. The freeze picture will be sent when you press the STOP/HOLD button in the same way that you select FIELD 1/FIELD 2/FRAME. ★ You can reselect the picture of the field 1/field 2/frame by changing the item selection when: • you press the STOP button in PLAY mode, or • the freeze picture is being sent in the program freeze mode.
S05.	EDIT FIELD	F1 [F1/F2] F2	Selects the field for the IN and OUT edit points. F1: The IN point is field 1, and the OUT point is field 2. F1/F2: The fields for the IN and OUT points are not fixed. If, however, the REC/EDIT button on the function control panel is pressed to start editing, the IN point is field 1, and the OUT point is field 2. F2: The IN point is field 2, and the OUT point is field 1.
S06.	BVB (PREVIEW MODE)	[DISABLE] ENABLE	Selects whether BVB or VBV is carried out in preview. DISABLE: Neither BVB nor VBV is carried out. ENABLE: When the channel preset button VIDEO is on, VBV is carried out, and when it is off, BVB is carried out.

Menu number	Item	Settings	Details
S07.	REACTION TIME	[0FRM] 2FRM | 30FRM (in steps of 2 frames)	Selects the number of frames to be subtracted from a time value stored by pressing the VIDEO IN/OUT button, AUDIO SPLIT IN/OUT button, CUE ENTRY button, or any of the buttons CUE1 to CUE10. This subtraction compensates for the reaction time in a manual operation.
S08.	PARA RUN	[DISABLE] ENABLE	When using the REMOTE-2A or REMOTE-2B connectors, specifies whether a number of VTRs can be operated in parallel in the same mode. DISABLE: Parallel operation is enabled. ENABLE: Parallel operation is disabled.
S09.	AUTO REWIND	[DISABLE] ENABLE	Specifies whether the tape is to be rewound automatically when an end of tape (EOT) is reached during tape transport. DISABLE: The tape is not rewound automatically. ENABLE: The tape is rewound automatically.
S12.	REF SELECT	EXT REF [AUTO] INPUT PB INT	Selects the reference signal. EXT REF: The external reference signal is selected. • If the external reference signal is input but inappropriate, "NO REF ∗" will appear in block 6 of the display. • If no external reference signal is input, "NO REF" will appear in block 6 of the display. In both cases, the STOP button will flash. AUTO: The reference signal is selected automatically as follows: • When the appropriate external reference signal and video signal are input, the external reference signal is selected in playback or the input video signal is selected in recording or editing. • When only either one of the external reference signal and the video signal is usable with the other either missing or being inappropriate, the usable one is selected. When the other signal is also input but inappropriate, the STOP button will flash. • When neither of the external reference signal and the video signal is input or when both of them are input but inappropriate, the internal lock mode will be entered. In this case, "NO REF ∗" will appear in block 6 of the display and the STOP button will flash. INPUT: The input video signal is selected. • If the input video signal is input but inappropriate, "NO REF ∗" will appear in block 6 of the display. • If no video signal is input,"NO REF" will appear in block 6 of the display. In both cases, the STOP button will flash. PB INT: During playback the internal reference signal is forcibly selected. Use this setting when it is necessary to carry out playback using the internal reference signal even when an external reference signal or video signal is input. During recording the input video signal is selected.

Menu number	Item	Settings	Details
S13.	CUE INPUT SELECT	[LINE] DIGITAL MIC	Selects the cue channel input. LINE: Line input from the CUE IN connector DIGITAL: Digital audio signals from DA-1 to DA-4. Two channels from the digital audio channels DA-1 to DA-4 are selected, and those two signals are mixed and input. Use the MONITOR SELECT buttons for channel selection. MIC: Line input connector. A microphone can be connected; the input level is −60 dBs.
S14.	SEARCH	DISABLE [ENABLE]	Specifies whether or not to play back during SEARCH mode. DISABLE: No playback (black) ENABLE: Playback is made.
S15.	PROGRAM REPEAT	[DISABLE] ENABLE	Specifies whether or not to repeat playback when the AUTO indicator is lit. DISABLE: No repeat playback ENABLE: When an interval is defined by the IN and OUT keys, then when in PLAY mode, a repeat playback of that interval will be carried out. The IN and OUT points will be maintained even if the power is turned off when a cassette is loaded. When the power is turned on again, the unit will enter repeat playback mode automatically.
(2) Time code and character settings			
S51.	TIME CODE SOURCE	[INT] EXT	Selects the source for the time code. INT: The internal time code generator EXT: An external time code input to the TIME CODE IN connector
S52.	TC GEN RUN MODEREC	REC [FREE]	Selects the time code counting mode. REC: The time code generator counts only while recording. FREE: The time code generator counts continuously.
S53.	TC READER	[TC] AUTO ATC	Selects the time code reader. TC: The LTC is selected. AUTO: The ATC is selected when the tape speed is from −1/4 to +1/4 normal; otherwise, the LTC is selected. The LTC is selected also when the ATC data is not recorded. ATC: The ATC is selected.
S54.	TC/UB DISPLAY SELECT	[TC] UB	Selects the display and preset data when the TT SEL key in the 21-key section is used to select the time code. TC: The time code data is displayed and preset. UB: The user bit data is displayed and preset.
S55.	TC REGEN/ PRESET SEL	REGEN PRESET [AUTO]	Selects the time code generator operating mode. REGEN: Regenerate mode PRESET: Preset mode AUTO: When recording with item S51 TIME CODE SOURCE set to INT, preset mode is selected; otherwise regenerate mode is selected.

Menu number	Item	Settings	Details
S56.	UB REGEN/ PRESET SEL	REGEN PRESET [AUTO]	Selects the user bit generator operating mode. REGEN: Regenerate mode PRESET: Preset mode AUTO: When recording with item S51 TIME CODE SOURCE set to INT, preset mode is used; otherwise regenerate mode is selected.
S57.	ATC RECORD	[DISABLE] ENABLE	Specifies whether to record the ATC data. DISABLE: The ATC data is not recorded. ENABLE: The ATC data is recorded.
S59.	MIXED CHARA OUTPUT	[DISABLE] ENABLE	Specifies whether or not to superimpose characters on the output from the VIDEO MONITOR OUT connectors. DISABLE: No superimposed characters MONITOR: Characters are superimposed. Use Initial Setup menu items I61 to I66 to specify the characters to be superimposed.
(3) Audio settings			
S70.	DA REPLACE (A1/A2)	[DISABLE] DA1/DA2 DA3/DA4 CUE/--- ---/CUE CUE/DA2 DA1/CUE	When controlling this unit with a conventional editor, with only two audio channels, selects which audio channels are to be used. DISABLE: Control is disabled. DA1/DA2: Digital audio channels 1 and 2 are used. DA3/DA4: Digital audio channels 3 and 4 are used. CUE/---: The cue channel is assigned to audio channel 1 of the editor. ---/CUE: The cue channel is assigned to audio channel 2 of the editor. CUE/DA2: The CUE channel is assigned to the audio 1 channel, and the DA-2 channel is assigned to the audio 2 channel. DA1/CUE: The DA-1 channel is assigned to the audio 1 channel, and the CUE channel is assinged to the audio 2 channel.
S71.	DA-1 INPUT SELECT	[LINE IN] DA-2 PB DA-3 PB DA-4 PB	Selects the input signals to digital audio channels 1 to 4. Selecting one of the signals DA-1 PB to DA-4 PB will enable channel-to-channel copy in INSERT editing mode. LINE IN: Line input. This is the normal setting. DA-1 PB: DA-1 playback signal DA-2 PB: DA-2 playback signal DA-3 PB: DA-3 playback signal DA-4 PB: DA-4 playback signal
S72.	DA-2 INPUT SELECT	[LINE IN] DA-1 PB DA-3 PB DA-4 PB	
S73.	DA-3 INPUT SELECT	[LINE IN] DA-1 PB DA-2 PB DA-4 PB	
S74.	DA-4 INPUT SELECT	[LINE IN] DA-1 PB DA-2 PB DA-3 PB	

Menu number	Item	Settings	Details
S79.	AUDIO LEVEL METER	[NORMAL] 2 SEC HOLD CAL NOR CAL EXP	Switches the level meter display for the DA-1 to DA-4 channels and the cue channel. NORMAL: Normal peak meter display 2 SEC: The current level, and the peak level over a 2 second interval are displayed. HOLD: The peak level display is held until a higher peak level is input. CAL NOR: Flashing mode. When a calibration signal is input within +0.1 dB of the input levels corresponding to the level meter LED segments 'OVER' to '−22', the corresponding segment will flash. If any other level signal is input, the segments light normally (no flashing). The segments below '−22' always operate normally. CAL EXP: 0.2 dB/segment mode. The meter display changes to 0.2 dB per segment, and the segment (−16, −18, −20, or −22) corresponding to the reference level (+6 dBs, +4.0 dBs, +2 dBs, or 0 dBs) selected by I74 CALIBRATION LEVEL flashes.* When the input signal level is lower than the reference level +0.1 dBs but not lower than the reference level −0.1 dBs, the corresponding segment changes from flashing to continuously on.
S80.	RF LEVEL METER	DA ERR [RF]	Switches the display of the RF level meter/ digital audio channel condition indicator. DA ERR: Digital audio error status RF: Video RF level

* This allows a finer level adjustment against the reference level.

Reference signal selection determined by the input signal status and the setting of menu item S12 REF SELECT, and the corresponding indications

When menu item S12 REF SELECT is set to EXT REF

Input signal*1		Ref. signal*2 selection	EXT REF indicator	INPUT indicator	STOP*3 button	Display*4 (block 6)
Video	Ext. ref.					
None	None	Internal	On	Off	Flashing	NO REF
Good	None	Internal	On	Off	Flashing	NO REF
None	Good	Ext. ref.	On	Off	/	—
Good	Good	Ext. ref.	On	Off	/	—
No-good	None	Internal	On	Off	Flashing	NO REF
None	No-good	Internal	On	Off	Flashing	NO REF *
No-good	Good	Ext. ref.	On	Off	/	—
Good	No-good	Internal	On	Off	Flashing	NO REF *
No-good	No-good	Internal	On	Off	Flashing	NO REF *

*1 **Concerning "Input signal":**
- "Ext.ref." is the external reference signal.
- "Good" indicates that the signal is input and appropriate.
- "No-good" indicates that the signal is input but inappropriate.
- "EE" indicates EE mode.
- "PB" indicates PLAY mode.
- "REC" indicates REC/EDIT mode.

*2 **Concerning "Ref. signal selection":**
- "Ref. signal" is the reference signal.
- "Internal" indicates that the internal lock mode is selected.
- "Ext. ref." is the external reference signal.

*3 **Concerning the "STOP button":**
- The flashing STOP button indicates that the selected reference signal is not input or that, although being input, it is inappropriate.
- "/" indicates that the STOP button will light when STOP mode is entered with a cassette tape loaded.

*4 **Concerning "Display":**
- Message "NO REF" indicates that the selected reference signal is not input.
- Message "NO REF * " indicates that the selected reference signal is input but inappropriate.
- "—" indicates that display block 6 remains blank unless an error is detected.

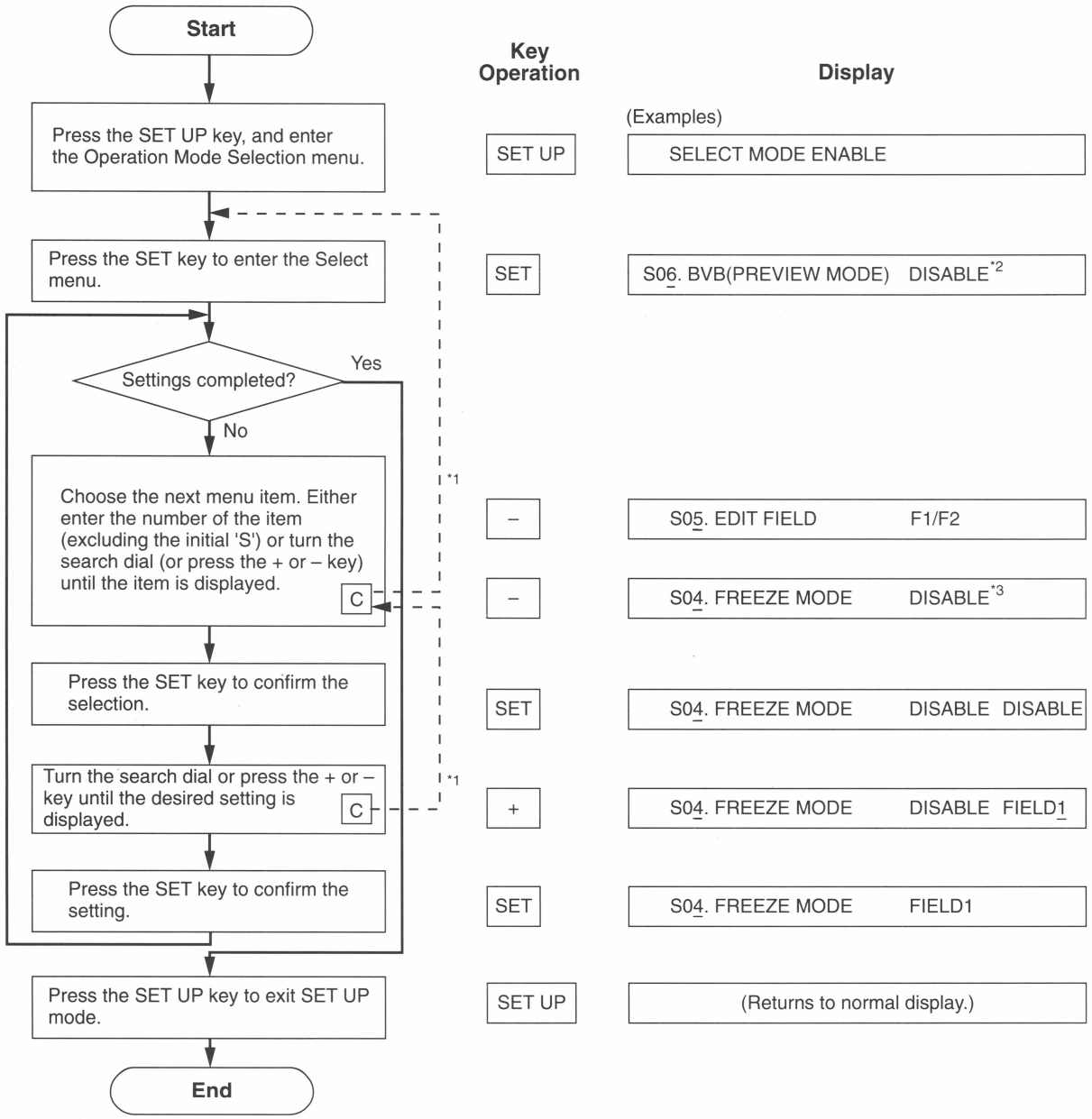
When menu item S12 REF SELECT is set to INPUT

Input signal*1		Ref. signal*2 selection	EXT REF indicator	INPUT indicator	STOP*3 button	Display*4 (block 6)
Video	Ext. ref.					
None	None	Internal	Off	On	Flashing	NO REF
Good	None	Input video	Off	On	/	—
None	Good	Internal	Off	On	Flashing	NO REF
Good	Good	Input video	Off	On	/	—
No-good	None	Internal	Off	On	Flashing	NO REF*
None	No-good	Internal	Off	On	Flashing	NO REF
No-good	Good	Internal	Off	On	Flashing	NO REF*
Good	No-good	Input video	Off	On	/	—
No-good	No-good	Internal	Off	On	Flashing	NO REF*

When menu item S12 REF SELECT is set to AUTO

Input signal*1		Ref. signal*2 selection	EXT REF indicator	INPUT indicator	STOP*3 button	Display*4 (block 6)
Video	Ext. ref.					
None	None	Internal	Off	Off	/	—
Good	None	Input video	Off	On	/	—
None	Good	Ext. ref.	On	Off	/	—
Good/EE /PB /REC	Good/EE /PB /REC	Input video	Off	On	/	—
		Ext. ref.	On	Off	/	—
		Input video	Off	On	/	—
No-good	None	Internal	Off	On	Flashing	NO REF*
None	No-good	Internal	On	Off	Flashing	NO REF*
No-good	Good	Internal	On	Off	Flashing	
Good	No-good	Internal	Off	On	Flashing	
No-good	No-good	Internal	Off	Off	Flashing	NO REF*

Using the Select menu


Start
Key Operation
Display
(Examples)
Press the SET UP key, and enter the Operation Mode Selection menu.
SET UP
SELECT MODE ENABLE
Press the SET key to enter the Select menu.
SET
S06. BVB(PREVIEW MODE) DISABLE*2
Settings completed?
Yes
No
Choose the next menu item. Either enter the number of the item (excluding the initial 'S') or turn the search dial (or press the + or – key) until the item is displayed.
C
*1
–
S05. EDIT FIELD F1/F2
–
S04. FREEZE MODE DISABLE*3
Press the SET key to confirm the selection.
SET
S04. FREEZE MODE DISABLE DISABLE
Turn the search dial or press the + or – key until the desired setting is displayed.
C
*1
+
S04. FREEZE MODE DISABLE FIELD1
Press the SET key to confirm the setting.
SET
S04. FREEZE MODE FIELD1
Press the SET UP key to exit SET UP mode.
SET UP
(Returns to normal display.)
End

Note

You cannot use the search dial for menu settings while the JOG button, SHUTTLE button or VAR button is lit.

*1 The broken lines indicate how the C key will retrace one step. This will not work, however, once the step has been committed with the SET key.

*2 This shows the previously selected item.

*3 Current setting.

Preselect menu

This menu allows you to assign the nine most frequently used items to the numeric keys 0 to 8. The unit is shipped with these allocated as follows.

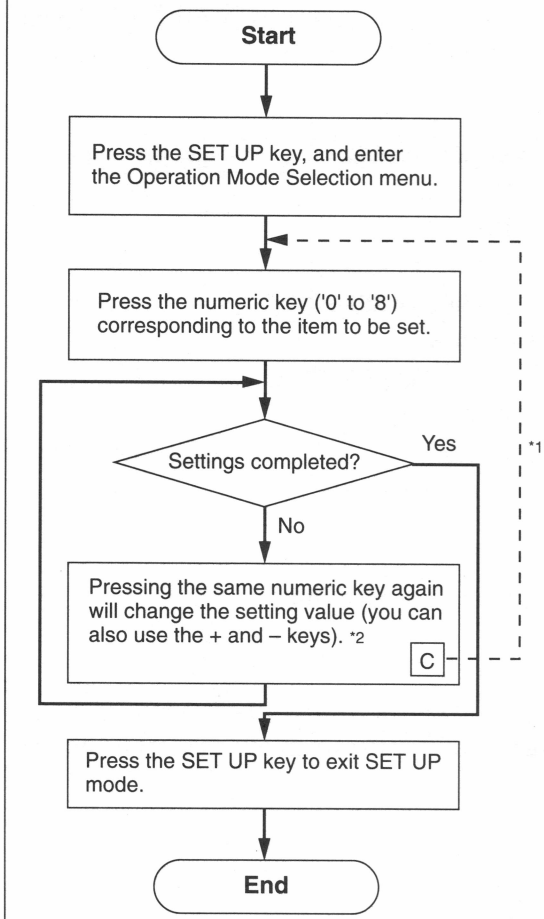
Numeric key	Preselect menu	Select menu number
0	P0. REMOTE SELECT	S01
1	P1. CUE INPUT SELECT	S13
2	P2. MIXED CHARA OUTPUT	S59
3	P3. TC/UB DISPLAY SELECT	S54
4	P4. TC GEN RUN MODE	S52
5	P5. TC REGEN/PRESET SEL	S55
6	P6. TIME CODE SOURCE	S51
7	P7. WFM SELECT	S03
8	P8. AUDIO LEVEL METER	S79

These allocations can be changed at any time.

See page 1-72.

Two overlay sheets are supplied which fit over the 21-key section so that you can label the current allocation for the Preselect menu. *See Appendix B.*

Using the Preselect menu


Start
Press the SET UP key, and enter the Operation Mode Selection menu.
Press the numeric key ('0' to '8') corresponding to the item to be set.
Settings completed?
Yes
No
*1
Pressing the same numeric key again will change the setting value (you can also use the + and – keys). *2
C
Press the SET UP key to exit SET UP mode.
End

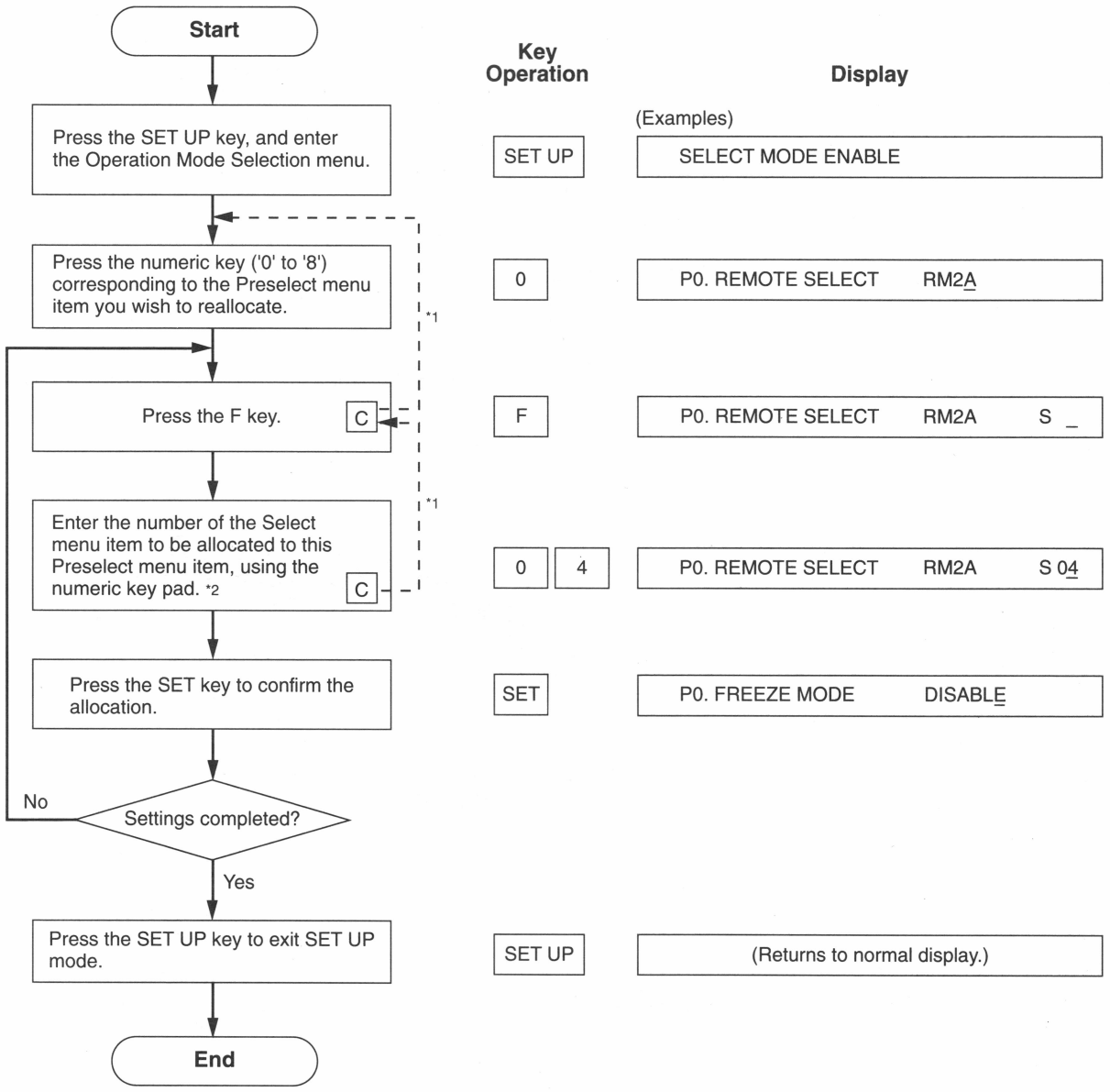
Key Operation	Display
	(Examples)
SET UP	SELECT MODE ENABLE
0	P0. REMOTE SELECT RM2A *3
0	P0. REMOTE SELECT RM2B
SET UP	(Returns to normal display.)

*1 The broken line indicates how the C key will retrace one step.

*2 Pressing a different numeric key other than '9' (in this case any of '1' to '8') will change to the corresponding Preselect menu item.

*3 Current setting.

Changing the Preselect menu allocations


Start
Key Operation
Display
(Examples)
Press the SET UP key, and enter the Operation Mode Selection menu.
SET UP
SELECT MODE ENABLE
Press the numeric key ('0' to '8') corresponding to the Preselect menu item you wish to reallocate.
0
P0. REMOTE SELECT RM2A
*1
Press the F key.
C
F
P0. REMOTE SELECT RM2A S _
Enter the number of the Select menu item to be allocated to this Preselect menu item, using the numeric key pad. *2
C
0
4
P0. REMOTE SELECT RM2A S 04
Press the SET key to confirm the allocation.
SET
P0. FREEZE MODE DISABLE
No
Settings completed?
Yes
Press the SET UP key to exit SET UP mode.
SET UP
(Returns to normal display.)
End

*1 The broken line indicates how the C key will retrace one step.

*2 Enter the two-digit number only. By pressing the + or − key, you can alternatively select an item from the Initial Setup menu (I), Test Mode menu (T) or Extension menu (E).

1-4-4. Initial Setup Menu

This menu includes basic set-up items which will not normally require changing during operation of the unit. You can select this menu only from the Home menu. This menu includes the following items:

(1) System settings: I04–I28

(2) Time code and character settings: I51–I66

(3) Audio settings: I70–I74

(4) Video settings: I81-I86

In the table, the default value is indicated by a box around the setting.

Menu number	Item	Settings	Details
(1) System settings			
I04.	INPUT CHECK MODE	EE INPUT [INP INH]	Selects the signals output from the VIDEO OUT, VIDEO MONITOR OUT and MONITOR L/R connectors when the INPUT button on the function control panel is pressed. EE: EE signals INPUT: Input signals INP INH: During playback, the TAPE (playback) signal is selected for video (the INPUT signal for audio).
I05.	LOCAL KEY ENABLE	[DISABLE] STOP EN FUNC EN ALL EN	Specifies which function control panel buttons are enabled when the REMOTE/LOCAL switch on the level control panel is set to REMOTE. DISABLE: All buttons are disabled. However, the Preselect menu and the TT SEL key can be used. STOP EN: Only the STOP button is enabled. However, the Preselect menu and the TT SEL key can also be used. FUNC EN: The STOP, STANDBY, REC/EDIT, PLAY, PREROLL/SEARCH, VAR, JOG and SHUTTLE buttons are enabled. The menus can also be used. ALL EN: All buttons are enabled, except the CONTROL P/R buttons.
I06.	AUTO MODE INSTRUCT	[DISABLE] ENABLE	Selects whether or not to display the operation sequence during automatic editing. DISABLE: Not displayed. ENABLE: The various indicators go on and off in sequence to indicate the operation sequence.
I07.	REEL MODE SHUTTLE	[DISABLE] ENABLE	When using SHUTTLE mode for remote control of the tape speed, selects whether or not to use capstan drive for prerolling with the tape speed not more than double. DISABLE: Capstan drive is used. Select this setting when connected to a BVE-800 editor. ENABLE: Reel drive only. Select this setting when connected to an editor such as a BVE-900/9000.

Menu number	Item	Settings	Details
I08.	VAR JOG WITH CLICK	DISABLE [ENABLE]	Selects whether the search dial should click in VAR mode. DISABLE: No click ENABLE: Click in the normal speed and STILL positions
I12.	STILL OFF TIMER	2 SEC 4 SEC 10 SEC 20 SEC 30 SEC 1 MIN 1.5 MIN 2 MIN [5 MIN]	Selects the time for automatically exiting still mode*1, to protect the tape. 2 SEC–5 MIN: When the specified time has elapsed, the still mode is terminated and the unit goes into the STOP mode.
I13.	STANDBY OFF TIMER*3	DISABLE 1 MIN | [9 MIN] (1 minute steps)	Selects the time for automatically changing STANDBY on mode to STANDBY off mode, to protect the tape. DISABLE: No automatic STANDBY off function; STANDBY on mode is maintained indefinitely. 1 MIN–9 MIN: When the specified time has elapsed, STANDBY on mode changes to STANDBY off mode. STANDBY on mode is maintained, however, if the ASSEMBLE button, INSERT button or AUTO indicator is lit.
I14.	SEARCH PREROLL TIME	[0 SEC] | 15 SEC 20 SEC 25 SEC 30 SEC	Selects the preroll time for searching cue point.
I15.	EDIT PREROLL TIME	0 SEC | [7 SEC] | 15 SEC 20 SEC 25 SEC 30 SEC	Selects the preroll time for editing.
I16.	EDIT POSTROLL TIME	1 SEC [2 SEC] | 15 SEC 20 SEC 25 SEC 30 SEC	Selects the postroll time in INSERT editing. Note that the postroll time for ASSEMBLE editing is fixed, at approximately 2 seconds.
I17.	REC CONFI MODE	[CONFI] EE	Selects the signals output from the VIDEO OUT connectors when the TAPE indicator in the 21-key section is lit during recording or editing.*2 CONFI: Signal from the playback head EE: EE signal.

*1 Still mode is equivalent to SHUTTLE, JOG, or VAR mode with the tape stationary.

*2 The audio output is always the EE signal because CONFI mode is not applicable to the audio signals.

*3 When the tape is near the end, the recorder automatically switches from the standby mode to the standby off mode after 30 seconds.

Menu number	Item	Settings	Details
I18.	IN POINT SYNCHRO	[DISABLE] ENABLE	Selects whether or not to adjust the tape speed between the cue up point and the IN point to make the difference between their time codes agree with real time. This item is effective when I19 SYNCHRO (AUTO MODE) is set to ENABLE. DISABLE: No tape speed adjustment ENABLE: Setting PLAY mode after cue up adjusts the tape speed to achieve synchronization at the IN point. (If after cue up, you enter PLAY mode from STANDBY off state, PLAY mode will only be entered when the head drum is at almost normal speed, so that synchronization will not be possible.)
I19.	SYNCHRO (AUTO MODE)	DISABLE [ENABLE]	During two-unit editing, specifies whether to synchronize the two units. DISABLE: No synchronization ENABLE: The recorder is synchronized to the player. This allows accurate editing.
I23.	EDIT W/O V-IN ENTRY	[DISABLE] ENABLE	During two-unit automatic editing, specifies whether or not editing can go ahead even if the recorder video IN point is not entered. DISABLE: If the recorder video IN point is not entered, editing cannot be carried out. (This is the normal setting.) ENABLE: If the recorder video IN point is not entered, it is calculated from the player video IN point and audio IN point and the recorder audio IN point, and editing is carried out based on this calculation.
I24.	PLAY COMMAND DELAY	– 15 FRM | [0 FRM] | + 15 FRM (1 frame steps)	To align the timing when this unit is used with a slave unit having a different response time, specifies the PLAY command delay on the slave unit. When the slave unit has a faster response, select a positive value to delay the PLAY command on the slave unit. Contrariwise, select a negative value when the slave unit has a slower response.
I25.	ASSEM PREVIEW MODE	[MODE 1] MODE 2	When previewing in ASSEMBLE editing, selects whether or not the tape transport should continue after the IN point. MODE 1: The tape stops at the IN point. MODE 2: When the OUT point is not entered, the tape keeps running after passing the IN point. When the OUT point is entered, the tape stops 2 seconds after the OUT point.
I26.	BAUD RATE (RS-232C)	[9.6K] 19.2K	Selects the speed for the RS-232C communications interface.
I27.	POWER ON PLAY	[DISABLE] ENABLE	Selects whether or not to start PLAY mode automatically if a cassette is loaded when the unit is powered on. DISABLE: No automatic PLAY mode ENABLE: PLAY mode is entered automatically. When S15 PROGRAM REPEAT is set to ENABLE, the unit will enter repeat playback mode automatically.

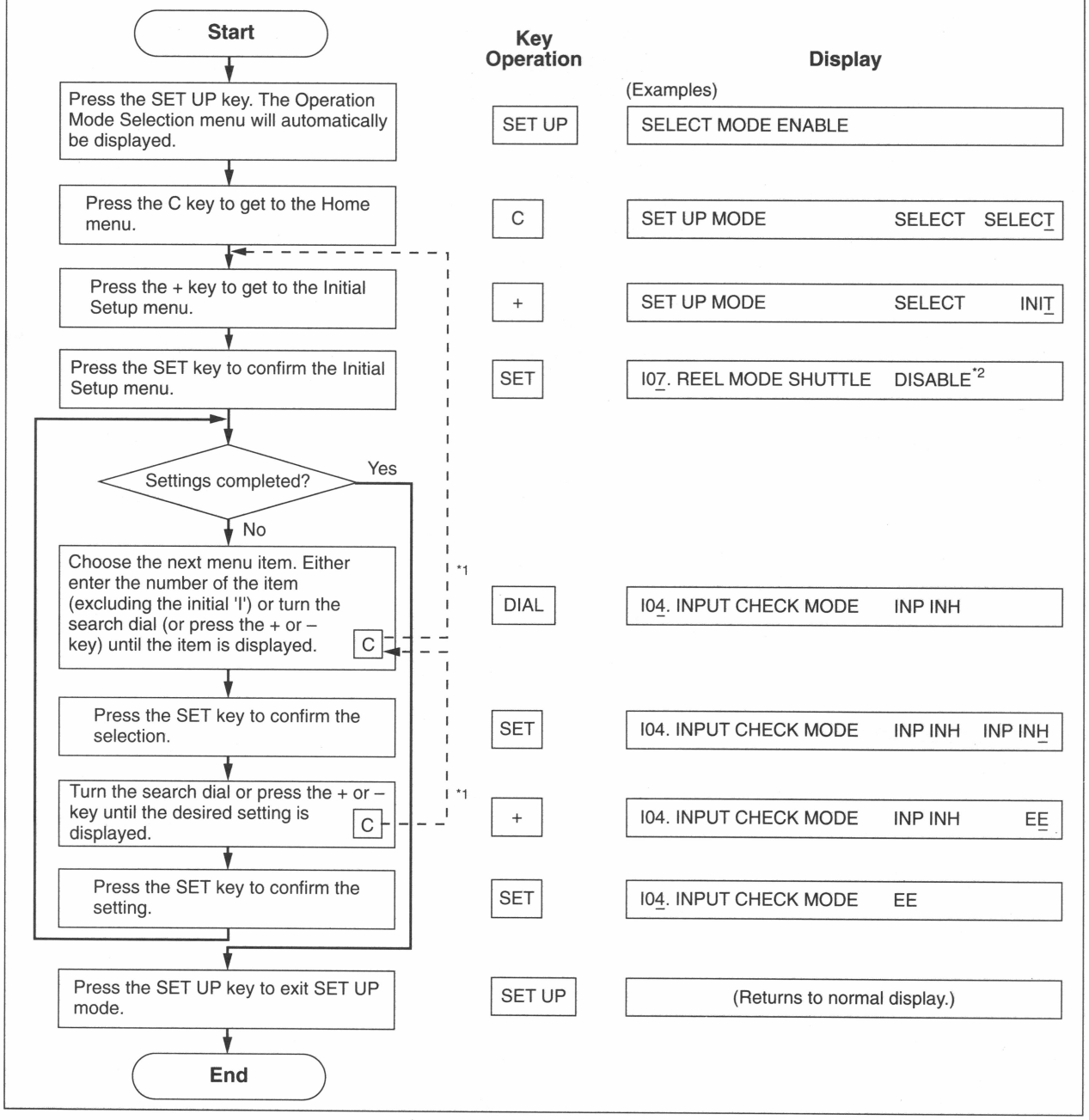
Menu number	Item	Settings	Details
(2) Time code and character settings			
I51.	TC SENSE MODE	[LTC-1] LTC-2 ATC	Selects the data to be returned in response to the CURRENT TIME SENSE command from the REMOTE-2A IN or REMOTE-2B IN/OUT connector. LTC-1: The LTC data is returned. LTC-2: Normally, the LTC data is returned. If the LTC data cannot be read correctly while the ATC data is read correctly, then the ATC data is returned. ATC: When the ATC data is read correctly in the tape speed range of ±1/4 normal, the ATC data is returned; otherwise the LTC data is returned.
I52.	TC LINE OUTPUT	[REGEN] PB/EE	Selects the time code to be output from the TIME CODE OUTPUT connector either: • when S55 TC REGEN/PRESET SEL or S56 UB REGEN/PRESET SEL is set to REGEN, or • when regenerate mode is selected automatically with S55 or S56 set to AUTO. REGEN: The time code regenerated by the time code generator is output. PB/EE: The playback time code (when the TAPE indicator is on) or the time code regenerated by the time code generator (when the TAPE indicator is off) is output.
I53.	TIME CALC MODE	[12H] 24H	Selects the method of determining the preroll direction from the time difference between the current point and the preroll point. 12H: When the difference exceeds 12 hours, the tape is prerolled in the reverse direction. When it is not more than 12 hours, the tape is prerolled in the forward direction. Use this selection for tapes which include continuous recordings straddling the 00:00:00:00 time. 24H: When the preroll point time value is larger than the current point time value, the tape is prerolled in the forward direction. When it is smaller than the current point time value, the tape is prerolled in the reverse direction.
I54.	TIMER DISPLAY MODE	+/− 12H [24H]	Selects the display mode for timer 1 and timer 2. +/− 12H: 12 hour display with a + or − sign. In this mode the time value not only of timer 2, but also of timer 1 cannot be preset. However, you can reset timer 1 with the RESET button. 24H: 24 hour display mode. The time value of timer 1 can be preset.

Menu number	Item	Settings	Details
I55.	TC INSERT	DISABLE [ENABLE]	Specifies whether the time code can be inserted during INSERT editing. DISABLE: Presetting the time code is not allowed (in INSERT editing), so the time code cannot be inserted. ENABLE: The time code can be inserted.
I56.	INTER-POLATED LTC	DISABLE [ENABLE]	Specifies whether the timer data is to be interpolated when the LTC cannot be read. DISABLE: No interpolation ENABLE: The timer data is interpolated.
I57.	INTER-POLATED ATC	DISABLE [ENABLE]	When S53 TC READER is set to ATC, specifies whether to interpolate the LTC data if the ATC data cannot be read correctly. DISABLE: No interpolation ENABLE: The LTC data is interpolated.
I61.	CHARAC-TER SIZE ADJ	[1] 2	Selects the size of characters superimposed on the picture.
I62.	CHARA V.POSITION ADJ	1 2 3 [4]	Selects the vertical position of characters superimposed on the picture.
I63.	CHARA H.POSITION ADJ	1 2 3 4 5 [6] 7 8	Selects the horizontal position of characters superimposed on the picture.
I64.	CHARA DISPLAY MODE	1-1 1-2 1-3 2-1 [2-2] 2-3 3-1 3-2 3-3	Selects the style for characters superimposed on the picture, when S59 MIXED CHARA OUTPUT is set to ENABLE • Character display without error messages 1-1: Plain white characters 1-2: White characters with black background 1-3: White characters with black border • Character display with error messages 2-1: Plain white characters 2-2: White characters with black background 2-3: White characters with black border • Error message display only 3-1: Plain white characters 3-2: White characters with black background 3-3: White characters with black border

Menu number	Item	Settings	Details
I65.	CHARA DISP (EXTEND)	[OFF] TCR TCR. TCG UBR UBR. UBG TM1 TM2 PLAYER FRZ TM	Selects the data to be displayed on the second line, under the display selected by I64 CHARA DISPLAY MODE. In two line display mode, the data is displayed for each frame. OFF: No two line display TCR: Time code read by the LTC reader TCR.: Time code read by the ATC reader TCG: Time code produced by the time code generator UBR: User bit data read by the LTC reader UBR.: User bit data read by the ATC reader UBG: User bit data produced by the time code generator TM1: Timer 1 data TM2: Timer 2 data PLAYER: Time data from the player in two-unit editing FRZ TM: Time data during a freeze. • When the time code or user bit data cannot be read normally, it is indicated by an asterisk (T∗R, U∗R, etc.). When I56 INTERPOLATED LTC is enabled, even when T∗R is displayed, a correctly interpolated LTC value is displayed.
I66.	MENU DISPLAY	[DISABLE] ENABLE	Specifies whether to superimpose menu information on the video output signal selected by S59 MIXED CHARA OUTPUT. DISABLE: Menu information is not superimposed on the video signal. ENABLE: During SET UP mode (when the SET UP indicator is flashing), menu information is superimposed on the video signal.When menu information is superimposed, the normal 1-line or 2- line character display is not superimposed. *See Section 3-1-4 for details of the display format.*
(3) Audio settings			
I70.	AUDIO ADVANCE/ DELAY	−800 | [0] | +700	Specifies the phase adjustment for the digital audio output signals (DA-1 to DA-4). The adjustable range is from −800 to +700 samples (one sample corresponding to approximately 20 microseconds). Press the [+] or [−] key for the sign, enter the number, then confirm by pressing the [SET] key.
I71.	CUE ATT (TAPE SPEED)	×1.5 [×5] ×10	Selects the tape speed at which the cue channel output level is attenuated in SHUTTLE mode. When the tape speed exceeds the selected value, the cue channel output level is attenuated.
I72.	CROSS FADE TIME	3mSEC | [10mSEC] | 15mSEC 20mSEC 30mSEC	Selects the length of the cross fade time at a digital audio channel editing point.

Menu number	Item	Settings	Details
I73.	AUTO MONITOR SELECT	[DISABLE] ENABLE	Specifies whether in low-speed SHUTTLE mode, the audio monitor selection is automatically set to the cue channel. DISABLE: No automatic selection ENABLE: The cue channel is automatically selected.
I74.	CALIBRATION LEVEL	– 16 DB [– 18 DB] – 20 DB – 22 DB	Selects the reference level for digital audio channel calibration to be applied when S79 AUDIO LEVEL METER is set to CAL EXP. The setting of this item also determines the level of the test signal output when T22 AUDIO TEST SG is set to other than OFF. – 16 DB: The level is set to + 6 dBs. – 18 DB: The level is set to + 4 dBs. – 20 DB: The level is set to + 2 dBs. – 22 DB: The level is set to 0 dBs. (0 dBs=0.775 V)
(4) Video settings			
I81.	INPUT MATRIX	[R PANEL] Y.PB.PR G.B.R	Selects the input video signal type. R PANEL: The selection is determined by the connector panel switch settings. Y.PB.PR: Y-P_B-P_R is selected. G.B.R: G-B-R is selected.
I83.	OUTPUT MATRIX	[R PANEL] Y.PB.PR G.B.R	Selects the output video signal type. R PANEL: The selection is determined by the connector panel switch settings. Y.PB.PR: Y-P_B-P_R is selected. G.B.R: G-B-R is selected.
I86.	NON LINEAR	OFF [ON]	Specifies whether to switch on or off the non-linear emphasis for the video input color difference signals P_B and P_R.

Using the Initial Setup menu


Start
Key Operation
Display
(Examples)
Press the SET UP key. The Operation Mode Selection menu will automatically be displayed.
SET UP
SELECT MODE ENABLE
Press the C key to get to the Home menu.
C
SET UP MODE SELECT SELECT
Press the + key to get to the Initial Setup menu.
+
SET UP MODE SELECT INIT
Press the SET key to confirm the Initial Setup menu.
SET
I07. REEL MODE SHUTTLE DISABLE*2
Settings completed?
Yes
No
Choose the next menu item. Either enter the number of the item (excluding the initial 'I') or turn the search dial (or press the + or – key) until the item is displayed.
C
*1
DIAL
I04. INPUT CHECK MODE INP INH
Press the SET key to confirm the selection.
SET
I04. INPUT CHECK MODE INP INH INP INH
Turn the search dial or press the + or – key until the desired setting is displayed.
C
*1
+
I04. INPUT CHECK MODE INP INH EE
Press the SET key to confirm the setting.
SET
I04. INPUT CHECK MODE EE
Press the SET UP key to exit SET UP mode.
SET UP
(Returns to normal display.)
End

Note

You cannot use the search dial for menu settings while the JOG button, SHUTTLE button or VAR button is lit.

*1 The broken lines indicate how the C key will retrace one step. This will not work, however, once the step has been committed with the SET key.

*2 This shows the previously selected item.

1-4-5. Saving and Recalling Set-up Data

This unit uses PROM and non-volatile RAM (NOVRAM) to hold both the initial settings and user settings. The saved settings can be loaded into set-up RAM at any time, so you can return easily to the initial settings, or the saved settings.

In the following description, the three sets of user values saved in non-volatile RAM are referred to as NOVRAM1, NOVRAM2 and NOVRAM3.

Note
The Select menu items S03 WFM SELECT as well as the Test Mode menu items and S12 REF SELECT cannot be saved.

Saving set-up data

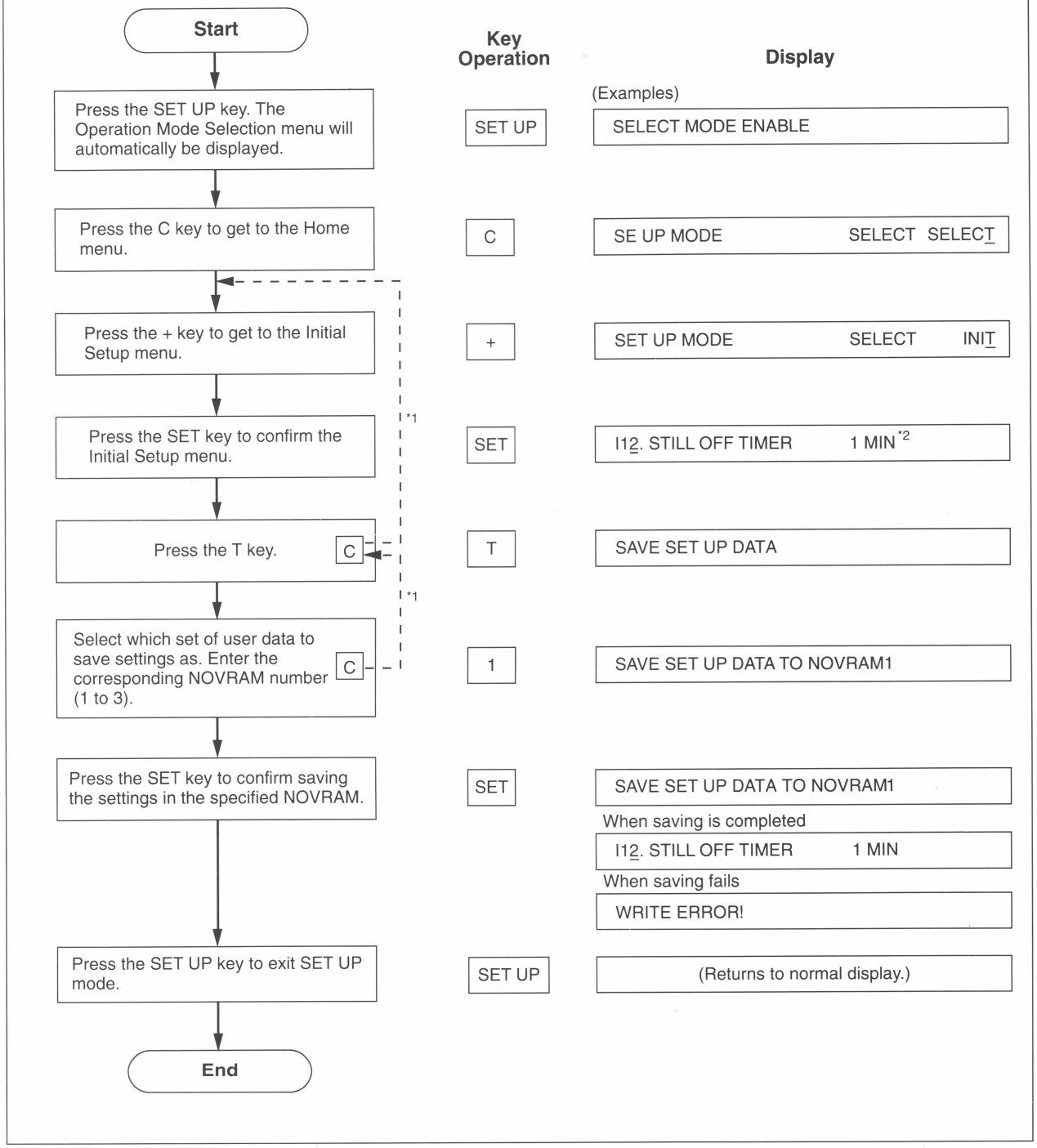
From the Initial Setup menu, you can save the set-up data as a user standard selection.

Note
If the IF-241 board is replaced, the non-volatile RAM settings will be lost.

Recalling set-up data

From the Operation Mode Selection menu, you can retrieve either the initial factory settings held in PROM or any of the three sets of user-saved settings.

Procedure for saving set-up data

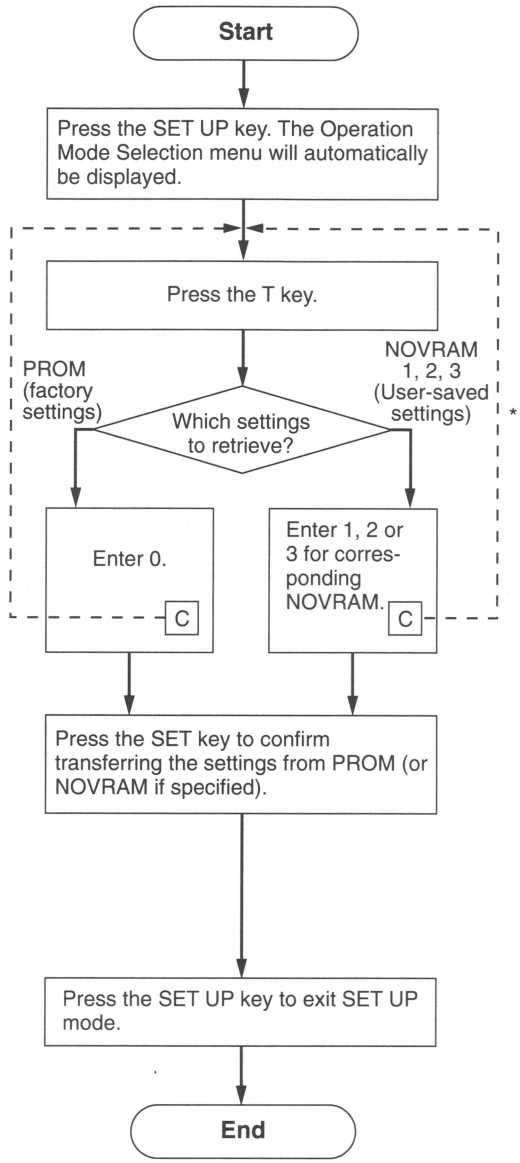

Start
Key Operation
Display
(Examples)
Press the SET UP key. The Operation Mode Selection menu will automatically be displayed.
SET UP
SELECT MODE ENABLE
Press the C key to get to the Home menu.
C
SE UP MODE SELECT SELECT
Press the + key to get to the Initial Setup menu.
+
SET UP MODE SELECT INIT
Press the SET key to confirm the Initial Setup menu.
SET
I12. STILL OFF TIMER 1 MIN *2
Press the T key.
C
T
SAVE SET UP DATA
Select which set of user data to save settings as. Enter the corresponding NOVRAM number (1 to 3).
C
1
SAVE SET UP DATA TO NOVRAM1
Press the SET key to confirm saving the settings in the specified NOVRAM.
SET
SAVE SET UP DATA TO NOVRAM1
When saving is completed
I12. STILL OFF TIMER 1 MIN
When saving fails
WRITE ERROR!
Press the SET UP key to exit SET UP mode.
SET UP
(Returns to normal display.)
End
*1
*1

*1 The broken lines indicate how the C key will retrace one step. This will not work, however, once the step has been committed with the SET key.

*2 This shows the previously selected item.

Error message "WRITE ERROR!"
This means that the current settings (held in volatile RAM) could not be written to the non-volatile RAM. If this message occurs, first press the C key to go back one step, andretrysaving. If the write still fails, there is probably a fault in the system. *Refer to your Sony service representative.*

Procedure for recalling set-up data


Start
Press the SET UP key. The Operation Mode Selection menu will automatically be displayed.
Press the T key.
PROM (factory settings)
Which settings to retrieve?
NOVRAM 1, 2, 3 (User-saved settings)
*
Enter 0.
C
Enter 1, 2 or 3 for corresponding NOVRAM.
C
Press the SET key to confirm transferring the settings from PROM (or NOVRAM if specified).
Press the SET UP key to exit SET UP mode.
End

Key Operation	Display (Examples)
SET UP	SELECT MODE ENABLE
T	RESTORE SET UP DATA
0	RESTORE SET UP DATA FROM PROM
SET	SELECT MODE ENABLE
	(When the transfer fails) READ ERROR!
SET UP	(Returns to normal display.)

* The broken lines indicate how the C key will retrace one step.

Error message "READ ERROR!"
This means that the settings could not be read from the non-volatile RAM.If this message occurs, check that the unit is not malfunctioning. Press the C key to go back to the Operation Mode Selection menu, and use the procedure on the previous page to save the current settings in NOVRAM, then check again that they can be retrieved.

1-4-6. Test Mode Menu

This menu consists of maintenance items which do not normally require user adjustment. All items of this menu are initialized to their default values every time the unit is turned on. If you exit SET UP mode after setting any item of this menu to other than the default value, "TEST MOD" will appear in block 6 of the display.

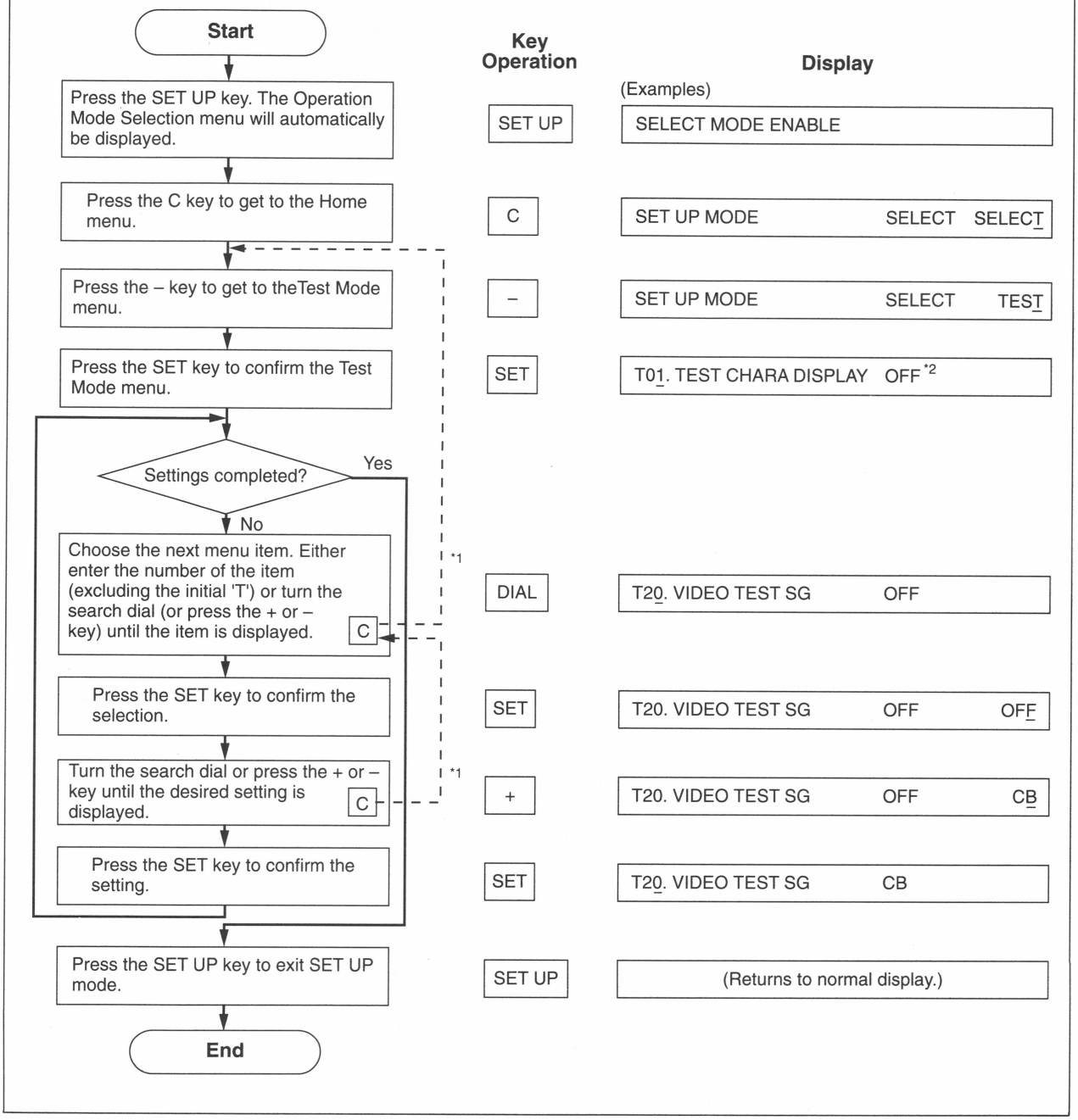
In the table, the default value is indicated by a box around the setting.

Menu number	Item	Settings	Details (when default setting not selected)
T01.	TEST CHARA DISPLAY	ON [OFF]	The complete character set is superimposed on the picture monitor.
T02.	WFM TEST SELECT	[OFF] MD-65 IV-23 DM-77A DM-77B TBC-14 TBC-15 SG-169 IPR-1 SMB-8 IO-53 AE-08	Selects the signal to be output to the WAVEFORM connector. This is done hierarchically; first select the board, using the search dial or the [+] and [−] keys, then press the [SET] key, then use the search dial or the [+] and [−] keys again to select the signal to be output from that board. It is not necessary to press the [SET] key to confirm the signal selection. Press the C key to return to selecting the board. When the default setting (OFF) is selected, the signal output is determined by the setting of S03 WFM SELECT. The other settings listed in the column on the left are the board names.
T03.	WFM TRIGGER SELECT	[AUTO] REF FRM SEG H SEG V PB H PB V TRG BUS REF HD REF VD	Selects the signal to be output to the WAVEFORM TRIGGER connector. AUTO: Signal selected by S12 REF SELECT or T02 WFM TEST SELEC REF FRM: REFERENCE FRAME synchronization signal SEG H: SEGMENT H synchronization signal SEG V: SEGMENT V synchronization signal PB H: Playback H synchronization signal PB V: Playback V synchronization signal TRG BUS: TRIGGER BUS signal REF HD: REFERENCE H synchronization signal REF VD: REFERENCE V synchronization signal
T04.	CUE METER SELECT	[OFF] CTL E TC E CUE E CTL B TC B CUE B	Selects the item whose level is to be indicated on the CUE level meter. OFF: Cue channel audio signal CTL E: Control channel erase current TC E: Time code channel erase current CUE E: Cue channel erase current CTL B: Control channel bias current TC B: Time code channel bias current CUE B: Cue channel bias current

Menu number	Item	Settings	Details (when default setting not selected)
T05.	ENC/DEC EE	[OFF] ON	Selects the internal route to be followed by the digital audio signals during EE mode. OFF: The digital audio signals are routed through an A/D converter, a signal selector circuit and a D/A converter. (The system delay involved is ignorable.) ON: The digital audio signals are routed through an A/D converter, a signal selector circuit, an encoder, a decoder and a signal selector circuit. (A system delay of 2 frames will occur. When recording digital audio signals on the cue channel by setting S13 CUE INPUT SELECT to DIGITAL, this setting will enable precise synchronization between the cue and video channels.)
T06.	VIDEO EE LEVEL CHECK	[OFF] ON	When this menu is set to on, the recorder displays the input video signal level on the oscilloscope. You can adjust the signal level displayed on the oscilloscope. The recorder uses the inside and outside generator so that the oscilloscope can display the signal for each field. OFF: switch outside input ON: switch inside signal generator
T07.	FORCED NON LINEAR	[OFF] ON	Activates the I86 NON LINEAR item setting or not when in the editing mode. (The I86 NON LINEAR item switches on or off the non linear emphasis for the video input color difference signals PB AND PR.) OFF: Deactivates the I86 setting. The recorder accepts the non linear of a signal from a player as it is, regardless of the I86 setting. ON: Activates the I86 item setting.
T12.	NORMAL FWD TEST	ON [OFF]	In STOP mode, the NORM FWD + EE signal is activated.
T13.	OSC CONT TEST	ON [OFF]	The audio bias/erase oscillator can be controlled without moving the tape.
T15.	LEVEL-CP LAMP TEST	ON [OFF]	The indicators on the level control panel are tested.
T16.	VIDEO REC TEST	ON [OFF]	The video signal recording system can be operated in STANDBY off mode.
T17.	MAINTE-NANCE	[OFF] TTP ADJ PANEL VERSION EXTEND	Enables testing the control panel and checking the tape transport system. TTP ADJ: The check mode for the tape transport system is entered. PANEL: The control panel test mode is entered. VERSION: The version number of the internal program is displayed. EXTEND: Extension menu E01 to E21 *(see pages 1-88 and 1-89)* can be used.
T19.	MEMORY DUMP	[OFF] ON ADDRESS	Specifies the memory whose contents are to be output from the VIDEO MONITOR OUT connectors. ON: The memory contents of the SY and SV boards are displayed. ADDRESS: The address of a memory to be dumped can be specified.

Menu number	Item	Settings	Details (when default setting not selected)
T20.	VIDEO TEST SG	[OFF] CB MB LINEAR	The internal signal generator is operated to generate the selected signal. CB: Color bar signal MB: Multi-burst signal LINEAR: Linearity (ramp signal)
T22.	AUDIO TEST SG	[OFF] 400HZ 1KHZ 3KHZ	The internal audio test signal generator is operated to generate a single tone signal of the selected frequency. The signal level is fixed at +6 dBm, +4.0 dBm, +2 dBm or 0 dBm according to the setting of I74 CALIBRATION LEVEL.

Using the Test Mode menu


Start
Key Operation
Display
(Examples)
Press the SET UP key. The Operation Mode Selection menu will automatically be displayed.
SET UP
SELECT MODE ENABLE
Press the C key to get to the Home menu.
C
SET UP MODE SELECT SELECT
Press the – key to get to theTest Mode menu.
–
SET UP MODE SELECT TEST
Press the SET key to confirm the Test Mode menu.
SET
T01. TEST CHARA DISPLAY OFF *2
Settings completed?
Yes
No
Choose the next menu item. Either enter the number of the item (excluding the initial 'T') or turn the search dial (or press the + or – key) until the item is displayed.
C
*1
DIAL
T20. VIDEO TEST SG OFF
Press the SET key to confirm the selection.
SET
T20. VIDEO TEST SG OFF OFF
Turn the search dial or press the + or – key until the desired setting is displayed.
C
*1
+
T20. VIDEO TEST SG OFF CB
Press the SET key to confirm the setting.
SET
T20. VIDEO TEST SG CB
Press the SET UP key to exit SET UP mode.
SET UP
(Returns to normal display.)
End

Note

You cannot use the search dial for menu settings while the JOG button, SHUTTLE button or VAR button is lit.

*1 The broken lines indicate how the C key will retrace onestep. This will not work, however, once the step has been committed with the SET key.

*2 This shows the previously selected item.

Extension menu

The Extension menu, consisting of items E01 to E21, is accessed by selecting the EXTEND function from T17 MAINTENANCE in the Test Mode menu. The selection procedure for these items is the same as that for the Test Mode menu.

In the table, the default value is indicated by a box around the setting.

Menu number	Item	Settings	Details (when default setting not selected)
E01.	TAPE/EE AT REC INHI	[TAPE] EE	When both the audio and video REC INHIBIT switches are on, and the TAPE indicator is lit, specifies the output signal in STANDBY on mode.
E03.	AUTO SHUT OFF BUZZER	[DISABLE] ENABLE	When the automatic off function is used for still mode or STANDBY on mode, selects whether to sound a buzzer 30 seconds before the automatic shut off takes effect. DISABLE: No buzzer ENABLE: The buzzer is sound.*
E05.	BINARY GROUP FLAG	[BINARY] ISO	Specifies the user bit data type by writing 00 or 10 in bits 43 and 59 of the LTC. BINARY: 00 ISO: 10
E07.	REC INHI STATUS	[AND] OR	Selects the conditions for the recording inhibit status to be transmitted in response to a 9-pin serial remote command. AND: In the editing channel preset state, when both of the audio and video REC INHIBIT switches are on. OR: When either of the audio and video REC INHIBIT switches is on, or when all of the editing channel preset buttons are off.
E08.	INPUT VIDEO AGC	DISABLE [ENABLE]	Enables or disables the automatic gain control on the video input circuit.
E09.	AD VIDEO SP SELECT	[DLC] FREQ	Selects the A/D converter level reference on the TBC-14 board to be applied during EE mode or normal playback. DLC: Dynamic linearity control signal FREQ: Frequency reference signal
E10.	HOLD UB SENSE RETURN	[DISABLE] ENABLE	When enabled, HOLD UB DATA is transmitted in response to a 9-pin serial remote command.
E13.	LOCKED SLOW×1	DISABLE [ENABLE]	Selects whether the CTL phase should lock in +1 times the normal speed VAR mode. DISABLE: CTL phase is unlocked. ENABLE: CTL phase is locked.

* The buzzer will not sound if the I12 STILL OFF TIMER setting is less than 30 seconds.

Menu number	Item	Settings	Details (when default setting not selected)
E15.*1	TC OUTPUT DELAY	0 FRAME [AUTO] 2 FRAME	For two-unit editing, the time code output from the 9-pin serial remote connector and the TIME CODE OUT connector can be advanced by two frames with respect to the video output.*2 0 FRAME: The time code is advanced by two frames. AUTO: The time code is advanced by two frames only when the editing channel is preset. 2 FRAME: The time code is output in phase with the video output.
E16.	SHUTTLE ×8 LIMITER	[DISABLE] ENABLE	The maximum speed in SHUTTLE mode can be changed, or a click position can be set for the search dial. DISABLE: Maximum is 40 times normal speed. ENABLE: In order not to lose the playback picture during fast winds, the maximum speed is set to 8 times normal speed.
E20.	EJECT INHIBIT	[DISABLE] ENABLE	The operation of the EJECT button can be inhibited. Note that the selections refer to the inhibiting function, not the button operation. ENABLE: This enables the inhibiting function, thus disabling the EJECT button. DISABLE: This disables the inhibiting function, thus enabling the EJECT button.
E21.	HOURS METER DISP	[DISABLE] ENABLE	The hours meter display can show three different running times as listed below, or the number of times a cassette has been loaded. DISABLE: This selection is always shown when this item is displayed. No hours meter display. ENABLE: Use the [+] and [−] keys (or the search dial) to select the display required. H01: OPERATION HOURS The total hours the unit has been operating are shown. H02: DRUM RUNNING HOURS The total hours the drum head has been rotating are shown. H03: TAPE TRAVELING HOURS The total hours the tape has been operating are shown. H04: CASSETTE LOADING TIMES The number of cassette loadings is shown.

*1 Effective only when the tape is moved forward.

*2 To allow 2 frames for video/digital audio signal processing, the time code is normally delayed by 2 frames, and output in phase with the video output.

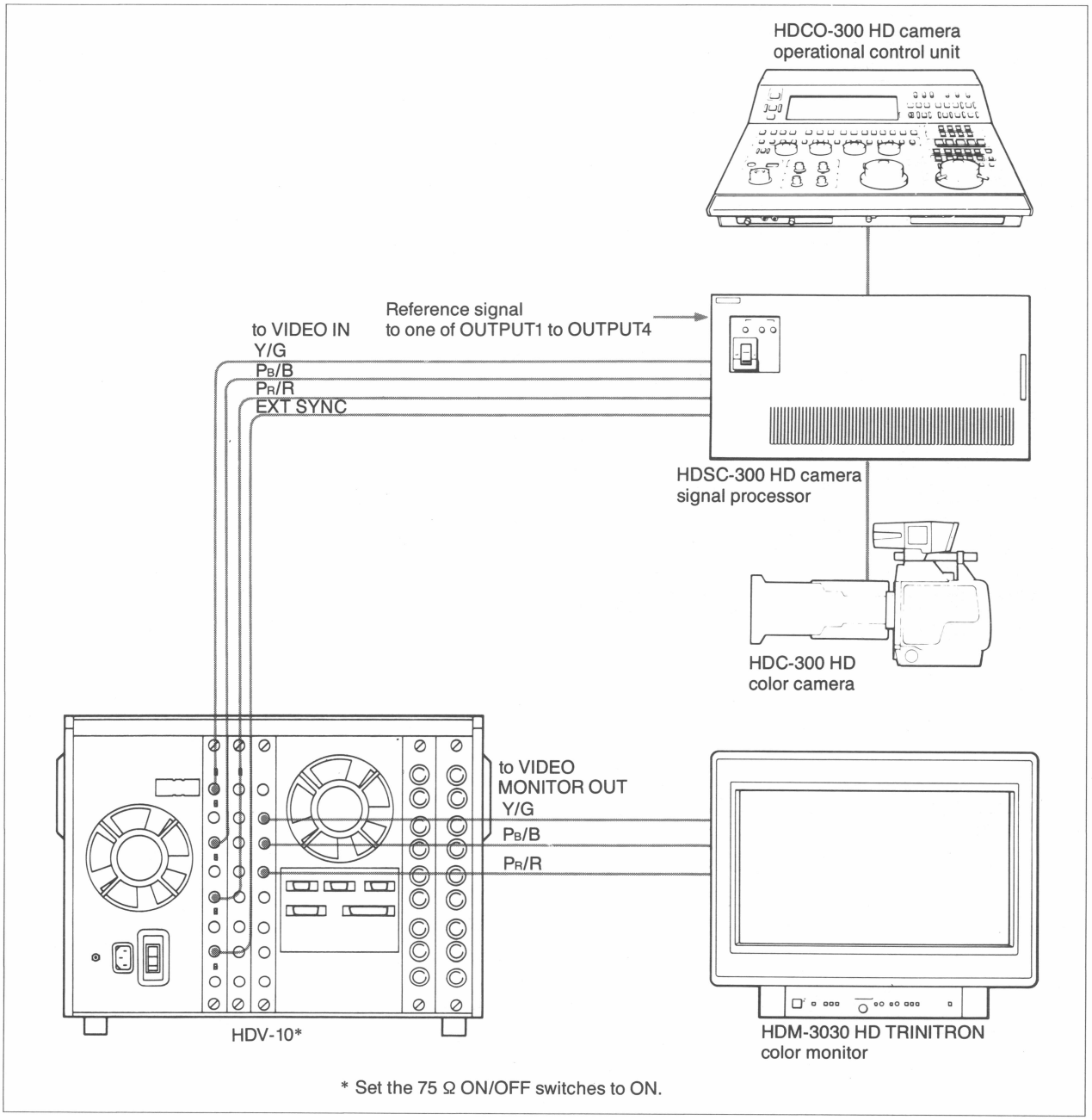
Section 2. PREPARATION

2-1. Connection Examples 2-1
2-2. Cassette Tape 2-2
2-3. Getting Started and Turning off the Unit 2-8
2-4. Positioning the Function Control Panel 2-10
2-5. Internal Circuit Boards 2-11

2-1. Connection Examples

This section shows some connection examples which will be helpful for you to configure a high definition digital video system incorporating the HDV-10.

Connecting a high-definition video camera system

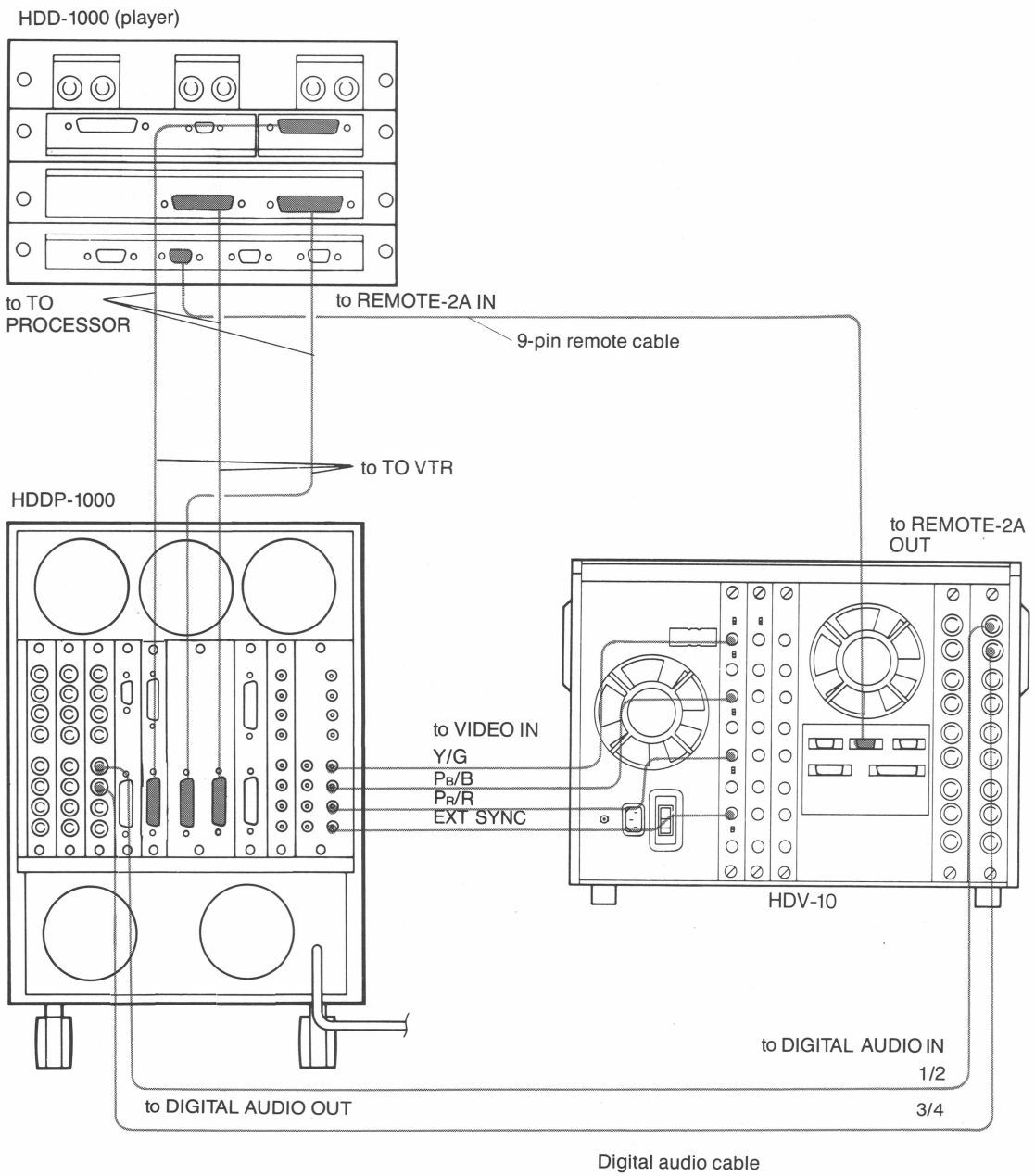


Connecting a high-definition video camera system

Note

The EXT SYNC connection is not necessarily required, but it will ensure stabler system performance.

Connecting an HD digital VTR (HDD-1000)

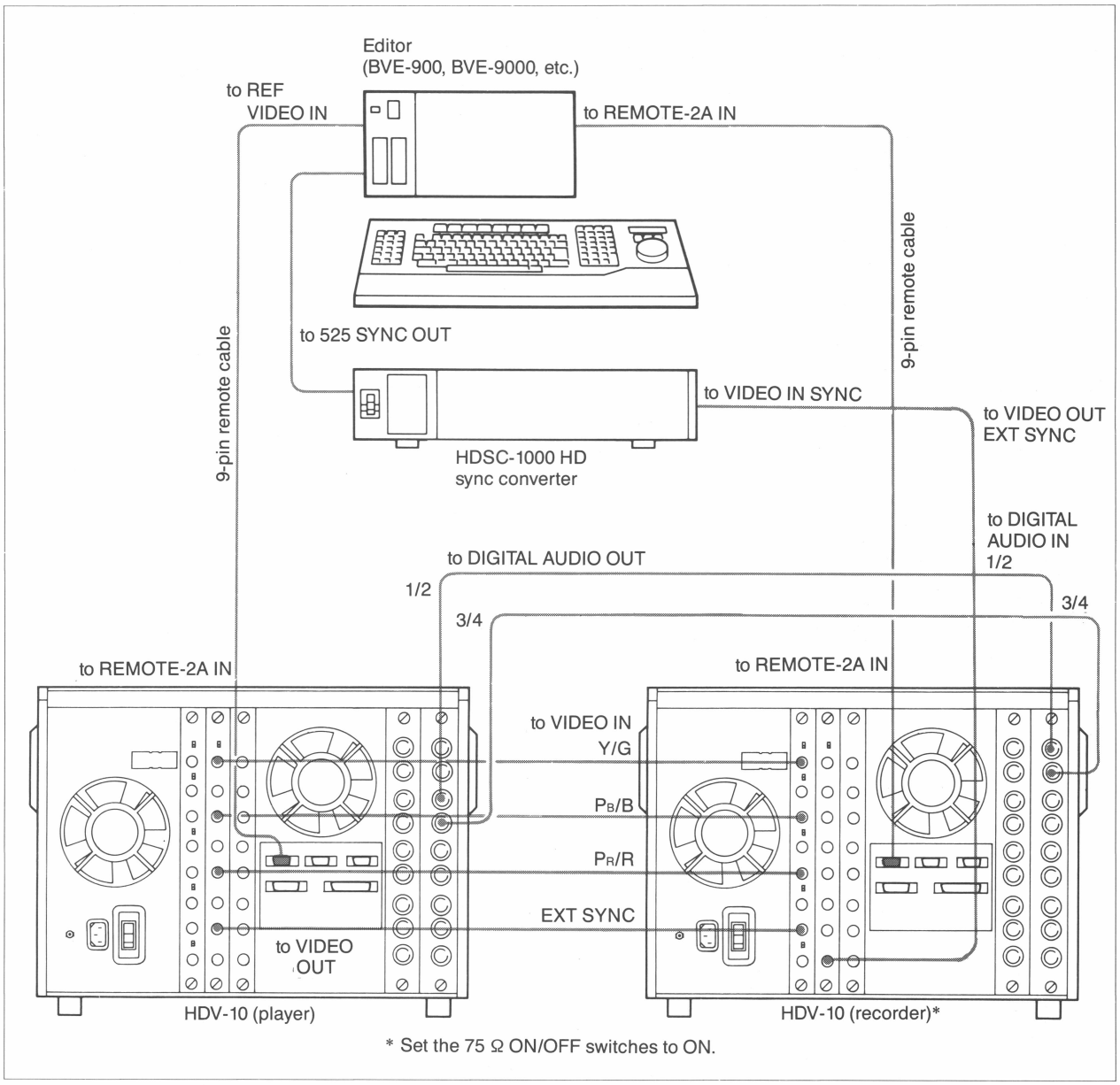


Connecting an HD digital VTR (HDD-1000)

Notes

- The EXT SYNC connection is not necessarily required, but it will ensure stabler system performance.
- Select the input or output video signal whose type is Y/PB/PR.

Connecting an editor



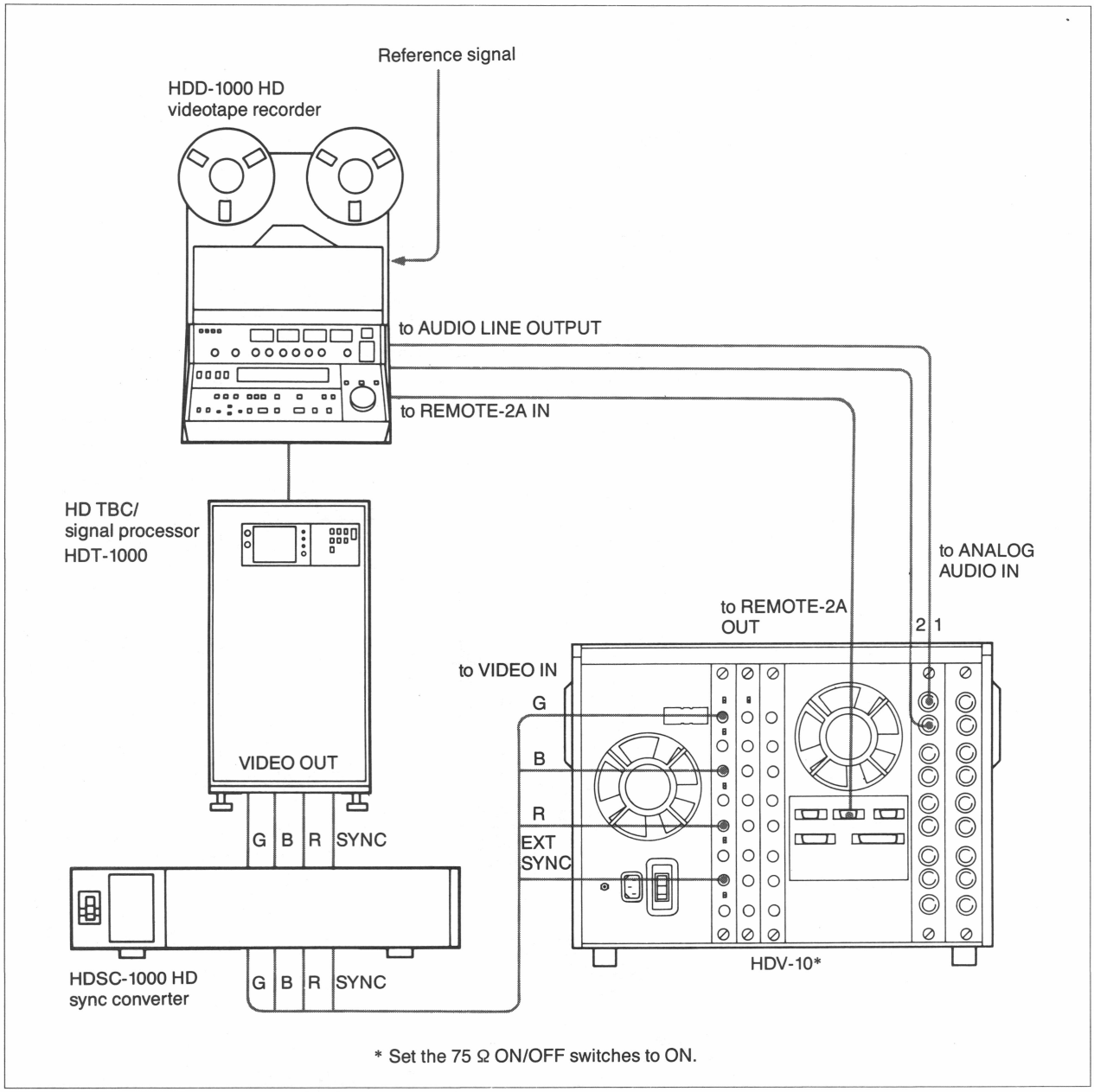
Connecting an editor

Notes

- When connecting a BVE-900 or BVE-9000 editor, set menu item I07 REEL MODE SHUTTLE to ENABLE.
- When connecting a BVE-800 editor, set menu item I07 REEL MODE SHUTTLE to DISABLE.
- For audio signal editing, set menu item S70 DA REPLACE (A1/A2) appropriately.
- You cannot use the BVE-3000 and BVE-5000 editing control systems with a high-definition VTR system.
- Select the input or output video signal whose type is Y/P_B/P_R.

Connecting an HD analog VTR (HDV-1000/HDT-1000)

An HDSC-1000 HD sync converter is required to make the input sync signal format compatible with the HDV-10 unit.



Connecting an HD analog VTR (HDV-1000/HDT-1000)

Note

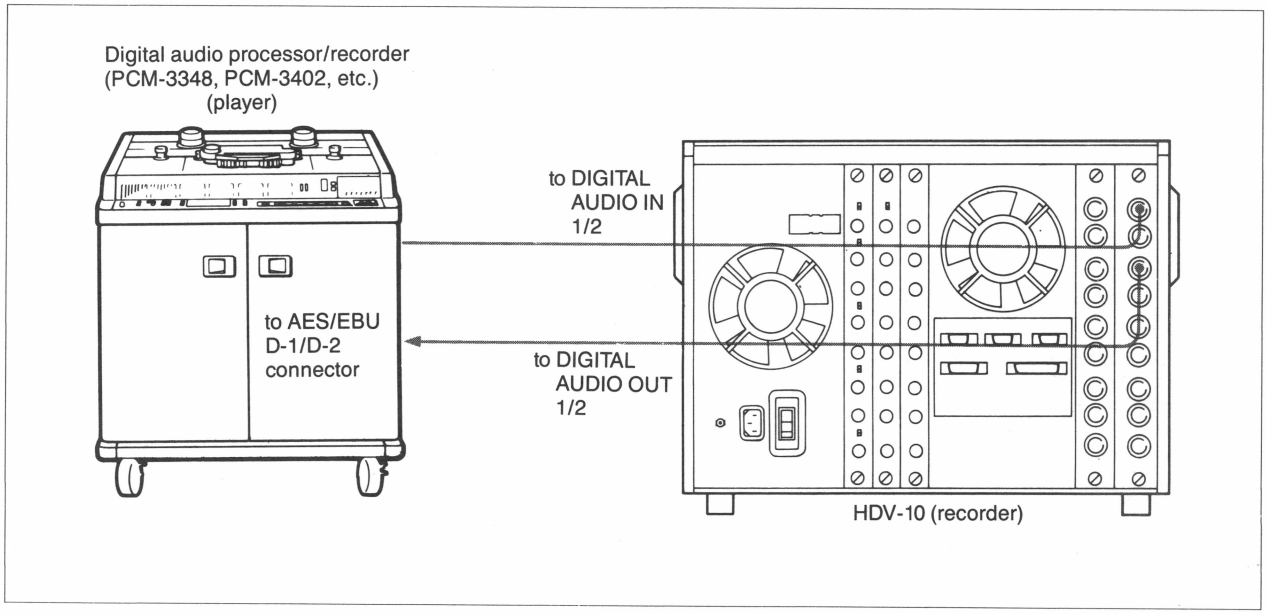
Select the input or output video signal whose type is Y/P_B/P_R.

Connecting digital audio equipment

Connect the digital audio output signals of the HDV-10 unit to the digital audio equipment from which the playback audio signals are received. This will enable both units to be synchronized with the same reference signal.

Note

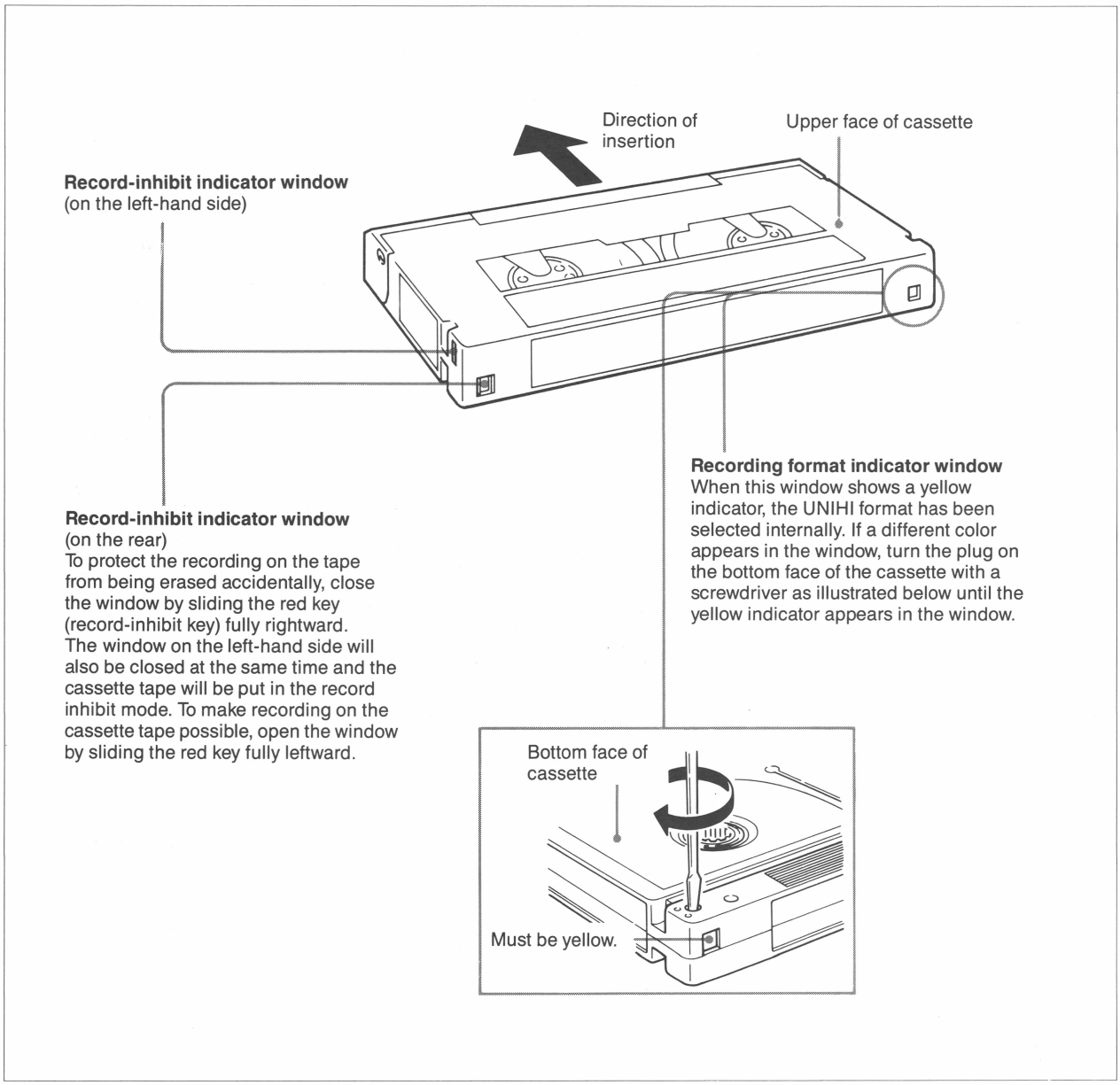
The HDV-10 unit uses a sampling frequency of 48 kHz. When the sampling frequency used by the audio equipment is not 48 kHz, use a sampling rate converter. When the sampling frequency used by the other equipment is selectable, set it to 48 kHz.
For time code editing, use a sync converter.



Connecting digital audio equipment

2-2. Cassette Tape

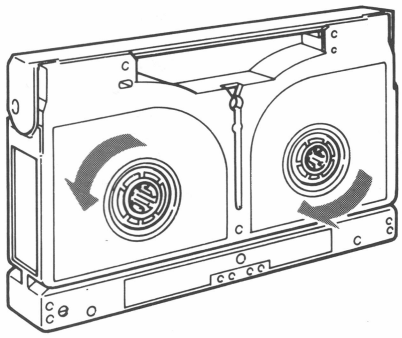
For recording or playback on the unit, use a 1/2-inch UNIHI cassette tape HCT-63M (with a maximum recording time of 63 minutes) or an equivalent. It has two record-inhibit indicator windows (interlocked) and a recording format indicator window as illustrated below. Be sure to check the indications before using it.


Direction of insertion
Upper face of cassette
Record-inhibit indicator window
(on the left-hand side)
Record-inhibit indicator window
(on the rear)
To protect the recording on the tape from being erased accidentally, close the window by sliding the red key (record-inhibit key) fully rightward. The window on the left-hand side will also be closed at the same time and the cassette tape will be put in the record inhibit mode. To make recording on the cassette tape possible, open the window by sliding the red key fully leftward.
Recording format indicator window
When this window shows a yellow indicator, the UNIHI format has been selected internally. If a different color appears in the window, turn the plug on the bottom face of the cassette with a screwdriver as illustrated below until the yellow indicator appears in the window.
Bottom face of cassette
Must be yellow.

Cassette tape

Taking up slack in the cassette tape

Using a slack cassette tape may result in damage to the tape or causing tape jams. Before inserting a cassette tape, make sure that there is no slack in it.



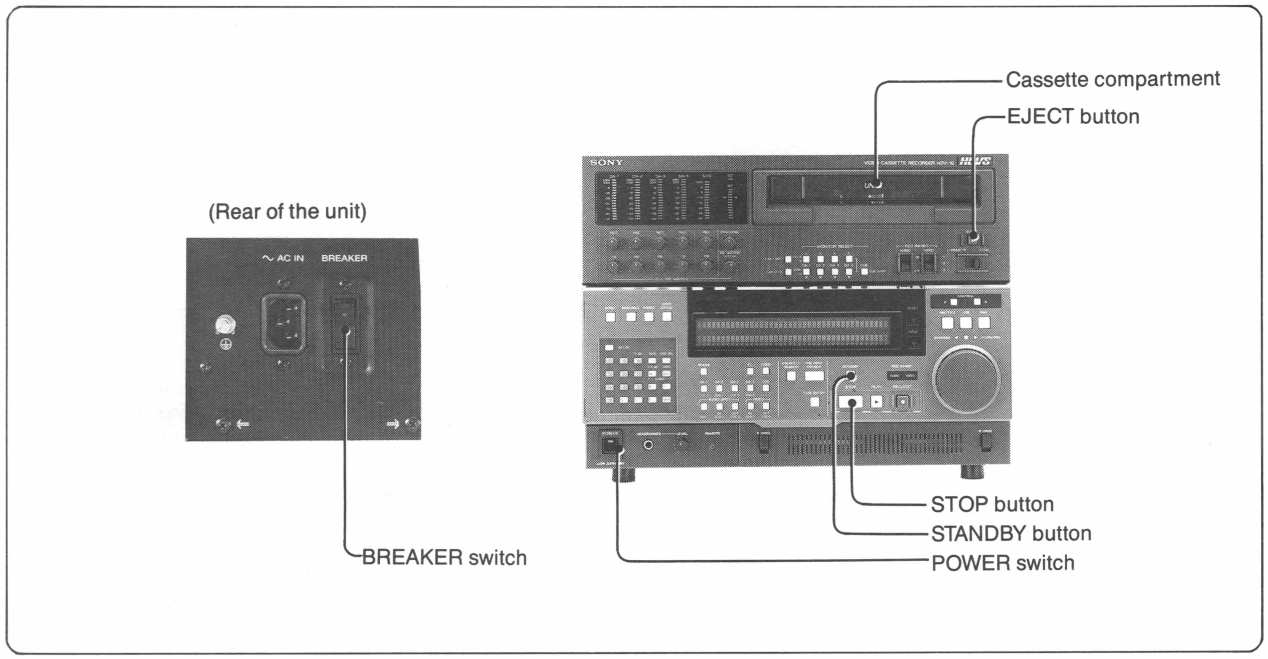
Turn either reel with a finger in the direction of the arrow until the tape is appropriately taut.

Taking up slack in the cassette tape

Note

To always obtain optimum performance of the cassette tape, we recommend that you avoid using its first and last 30 seconds portions. Recording or playback made using such end portions of the cassette tape may be degraded depending on the conditions involved.

2-3. Getting Started and Turning off the Unit

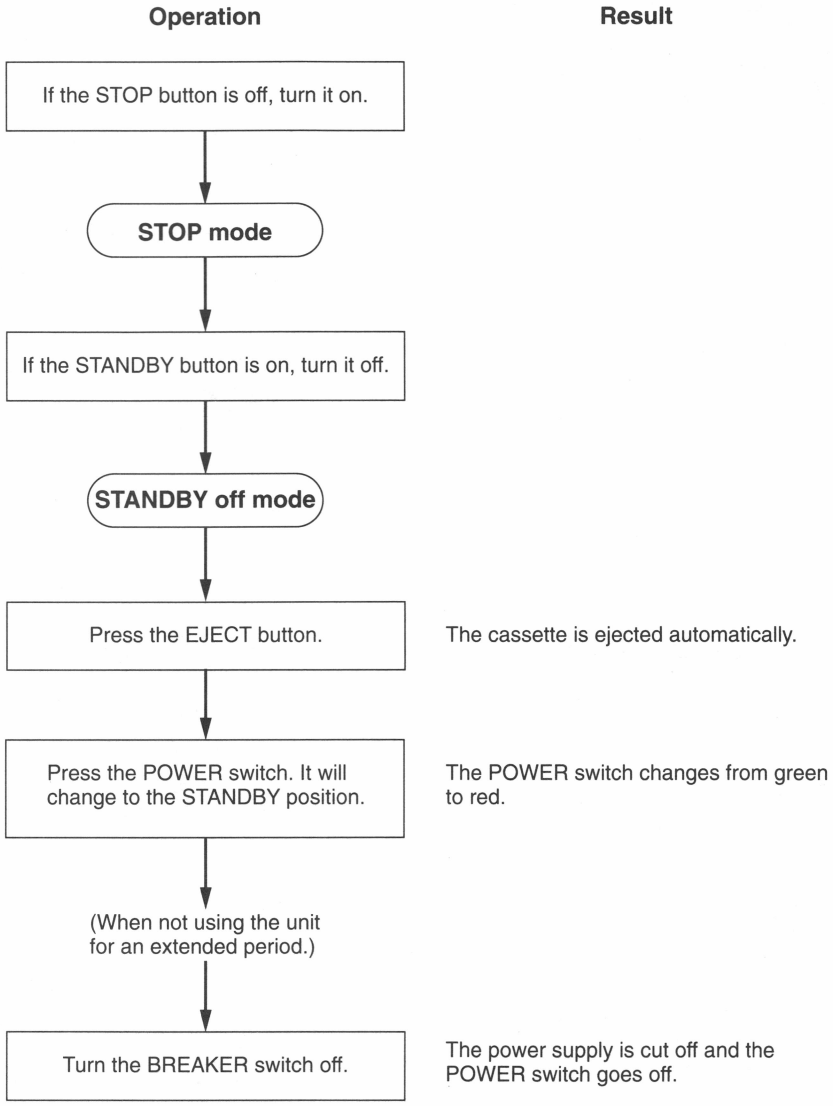


Controls used to get started and turn off the unit

To get started, proceed as follows:

Operation	Result
Make sure connections have been made.	
Make sure the POWER switch is lit red with the BREAKER switch on.	
Press the POWER switch to set it to ON.	The POWER switch changes from red to green. "INITIALIZE" appears on the function control panel display. The display then shows timer data within 4 to 5 seconds.
Insert a cassette in the cassette compartment.	The cassette is loaded automatically. The STOP button lights.
STOP mode	

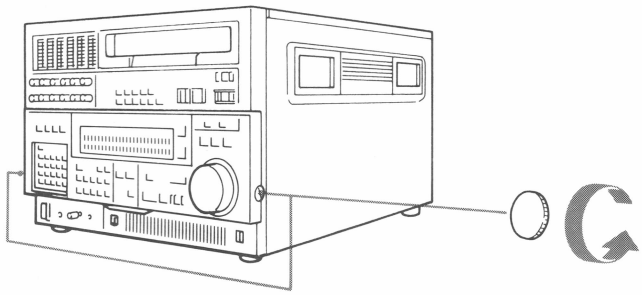
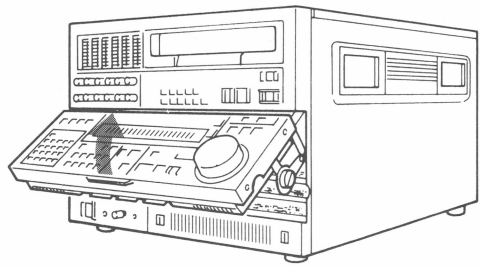
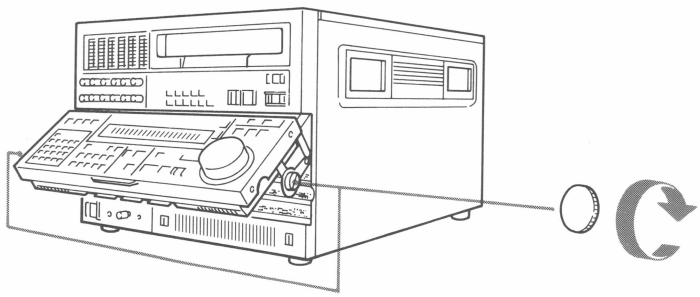
To turn off the unit, proceed as follows:


Operation
Result
If the STOP button is off, turn it on.
STOP mode
If the STANDBY button is on, turn it off.
STANDBY off mode
Press the EJECT button.
The cassette is ejected automatically.
Press the POWER switch. It will change to the STANDBY position.
The POWER switch changes from green to red.
(When not using the unit for an extended period.)
Turn the BREAKER switch off.
The power supply is cut off and the POWER switch goes off.

2-4. Positioning the Function Control Panel

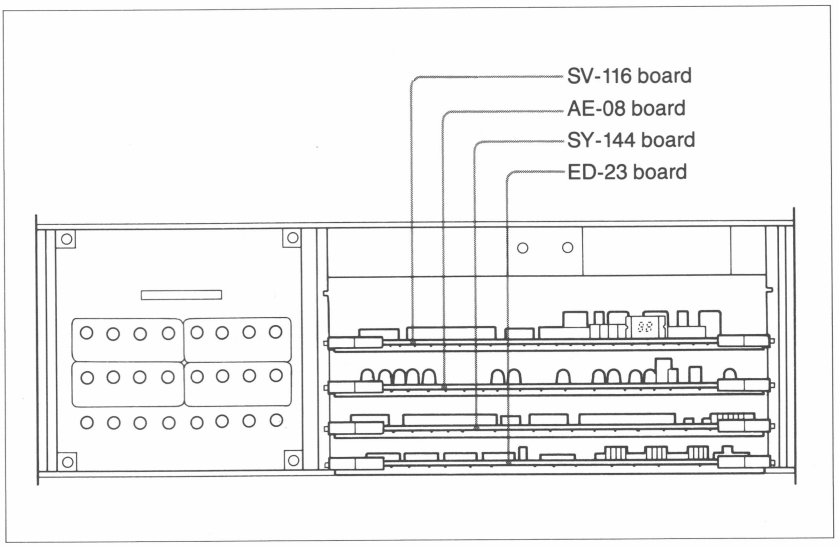
The function control panel can be opened and positioned at an angle of 15, 45, or 90 degrees to the front of the unit as shown below.

To change the function control panel position

1 Loosen the clamp screws by turning them counter-clockwise with a coin or the like.	
2 Open the panel to the desired position (can be fixed in the 15-, 45-, or 90-degree open position).	
3 Tighten the clamp screws by turning them clockwise. The panel will be fixed.	

2-5. Internal Circuit Boards

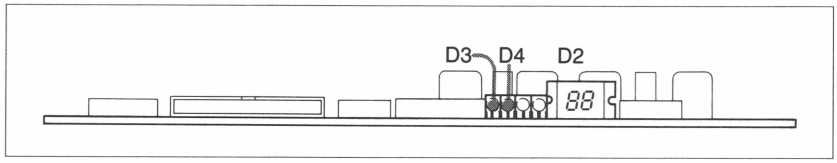
Opening the function control panel will reveal the video control panel on the left and circuit boards on the right.
This section describes the circuit boards only.



Circuit boards behind the function control panel

Note

The control knobs and switches on the circuit boards are for use in maintenance or testing. Do not use them during ordinary operations.



SV-116 board

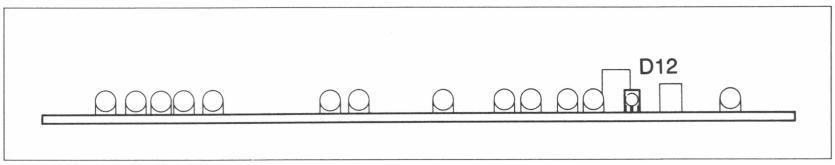
D2 (Servo system error indicator)
Shows a flashing hexadecimal error code when the CPU detects a servo system error. The error codes are as follows:

Error code	Meaning
(00)	(The servo system is operating normally.)
02-09, 0A	Hardware fault in the servo system CPU
0B	CPU malfunction detected by the watchdog timer on this board
0C	Abnormal primary input voltage (for example, due to an instantaneous power failure) in the power supply unit
0D	Servo system error detected on the SY-144 board
10-15	Abnormal voltage in the power supply system
20-29, 2A	The peripheral hardware of this board has not been initialized correctly.
30-35	Fault in the cassette compartment or its sensor system
36	Fault in the drum system
39	The cassette type has not been identified.
3A	Condensation on the drum
50	Abnormal current in the cassette compartment motor
51	The cassette has not been loaded or ejected within the designated time.
60-65	The reel motor or capstan motor rotation is abnormal.
70-73	Servo system parameter error
81, 82	Error related to the SY-144 board

D3 (Drum servo status indicator)
Indicates the operating status of the drum servo system.
On: The drum servos for speed and phase control are both locked.
Flashing: The drum servo for speed control is locked, but that for phase control is not.
Off: The drum is stopped.

D4 (Capstan servo status indicator)
Indicates the capstan servo status during normal playback (normal-speed forward playback).
On: The capstan servo for speed control and CTL phase control are both locked.
Flashing: The capstan servo for speed control is locked, but that for CTL phase control is not.
Off: Either the capstan is stopped or the unit is not in PLAY mode for normal playback.

AE-08 board

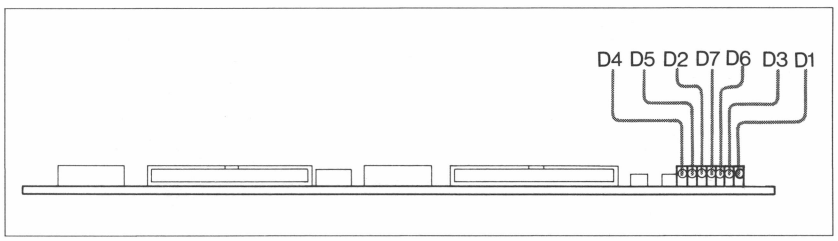


AE-08 board

D12 (Reproduced time code indicator)
Lights when the tape is played back.

SY-144 board

This circuit board controls the whole system. It recognizes the input signals such as those from the control panels or a remote controller and outputs the corresponding signals to the relevant circuit boards. It has two CPUs referred to as system A (V25) and system B (V33), respectively.



SY-144 board

D1 (Time code read indicator)
Lights when a time code is read.

D2 (System B condition indicator)
Lit while system B is operating normally.

D3 (System A condition indicator)
Lit while system A is operating normally.

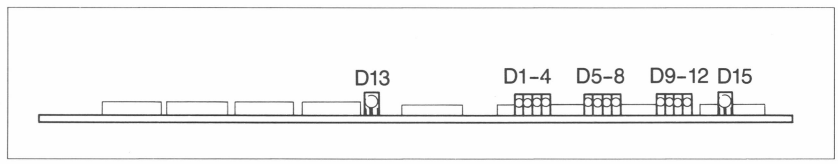
D4 (System B clock condition indicator)
Lit while the CPU clock of system B is operating normally.

D5 (System B data strobe indicator)
Lights when the CPU of system B reads data normally.

D6 (System A data strobe indicator)
Lights when the CPU of system A reads data normally.

D7 (System A clock condition indicator)
Lit while the CPU clock of system A is operating normally.

ED-23 board



ED-23 board

D1 to D12 (Digital audio compensation indicators)
These indicators light when digital audio errors have been compensated for.

- **D1 to D4 (Muting indicators)**
  Light when an absence of 4 or more data samples is compensated for by muting. These indicators D1 to D4 correspond to digital audio channels 1 to 4.
- **D5 to D8 (Holding indicators)**
  Light when an absence of 2 or more data samples is compensated for by holding. These indicators D5 to D8 correspond to digital audio channels 1 to 4.
- **D9 to D12 (Averaging indicators)**
  Light when an absence of 1 or more data samples is compensated for by averaging. These indicators D9 to D12 correspond to digital audio channels 1 to 4.

D13 (Reference SYNC indicator)
Lit while the internal clock generator is locked with the reference SYNC signal for video.

D15 (Clock indicator)
Lit while the VCXO oscillator on the ED-23 board is operating.

Section 3. OPERATION

3-1. Standard Operations 3-1
3-2. Recording 3-15
3-3. Playback 3-24
3-4. Editing 3-37
3-5. Remote Control 3-61
3-6. Alarm Functions 3-64

3-1. Standard Operations

3-1-1. Level Control Panel

Use the following controls on the level control panel to adjust the unit before recording, playback or editing. Note that these controls all have a preset setting which is automatically used when they are in the pushed-in position.

- **TRACKING control**

For PLAY mode, pull the knob out, and adjust it so that the RF level meter/digital audio channel condition indicator shows the maximum indication.

- **PB MASTER level control**

For PLAY mode, pull the knob out to adjust the output levels for the four digital audio channels simultaneously.

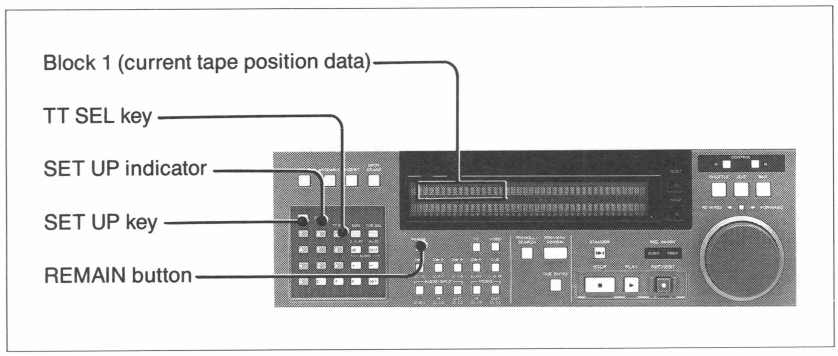
- **DA-1 to DA-4 and CUE REC level controls**

For REC/EDIT mode, pull the corresponding knob out, and adjust it so that the level meter shows a maximum indication of −16 dB to −4 dB for digital audio channels 1 to 4, and −10 dB to −6 dB for the cue channel.

3-1-2. Displaying and Setting the Time Code, User Bits and Timer Data

Selecting the data shown in block 1 of the display

Press the SET UP key to change to SET UP mode (the SET UP indicator will flash), then press the TT SEL key. Pressing the TT SEL key cycles the display in the sequence time code or user bit data—timer 1 data—timer 2 data.
In addition to displaying the above information, if the REMAIN button is pressed, block 1 of the display will show the tape remaining in minutes.



Controls used to select the data for display in block 1

The data displayed is determined by the menu settings, as shown in the following tables.

Time code and user bit data

Menu item S54	Menu item S51	Display in block 1		
		EE*	TAPE	INPUT
TC	INT	TCR (time code generated by the time code generator)	TCR (time code read by the time code reader)	TCG (time code generated by the time code generator)
	EXT	TCR (time code input from the TIME CODE IN connector)		
UB	INT	UBR (user bit data generated by the time code generator)	UBR (user bit data read by the time code reader)	UBG (user bit data generated by the time code generator)
	EXT	UBR (user bit data input from the TIME CODE IN connector)		

* When the TAPE indicator is off, then pressing the INPUT button in STOP mode will change the mode to EE until another mode is selected. In recording mode, also, EE mode will be selected.

Timer 1 and timer 2

Menu item I54	Display in block 1
+/– 12H	12 hour display
24H	24 hour display

Notes on the display in block 1

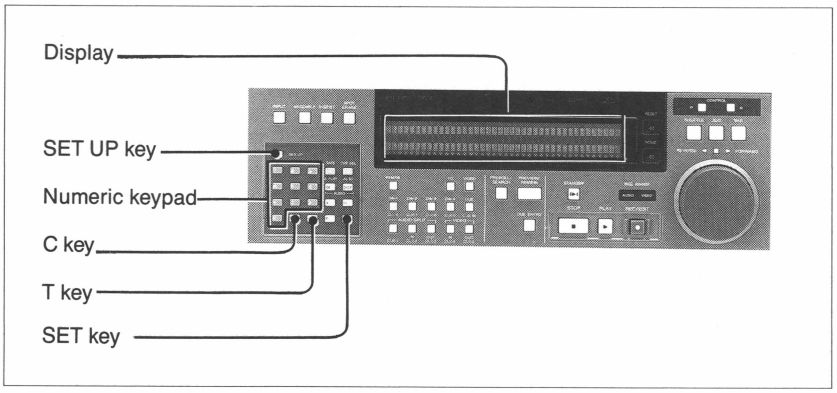
- **Resetting timer 1 and timer 2 data**
  You can reset the timer 1 value at any time by pressing the RESET button on the function control panel, but once a cassette is loaded, the timer 2 value cannot be reset.
- **Timer 1 and timer 2 count operations**
  These counters start counting immediately when the unit is put into any tape operating mode other than STOP mode. Timer 2 starts counting from zero when the unit is first put into any tape operating mode other than STOP mode after the cassette is loaded.
- **Maintaining timer 1 and timer 2 values**
  If the power is turned off with a cassette still loaded, the values of these timers are maintained.

Values in ASSEMBLE or INSERT editing modes

When the ASSEMBLE or INSERT button is lit, and the tape speed is approximately normal speed, 2 frames are added to the value read by the time code reader. This correction is to allow for the two-frame delay on the VTR during editing.

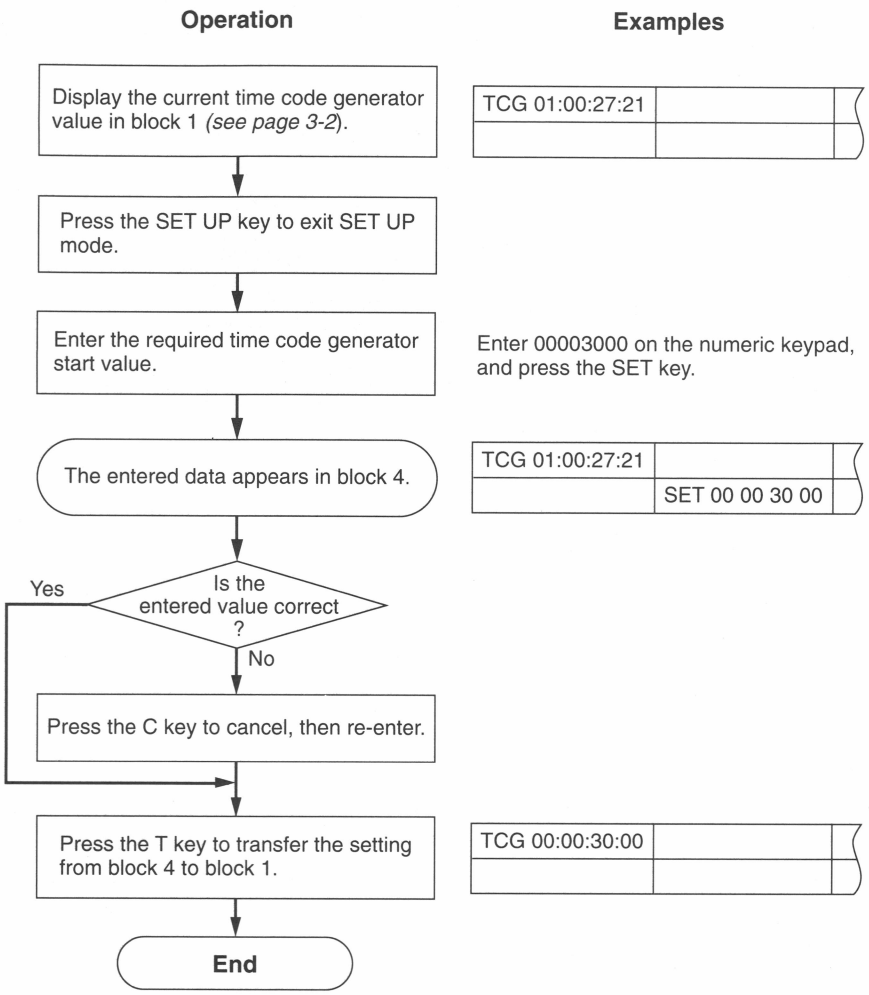
Setting the time code values, user bit data and timer data

Setting the time code generator start value



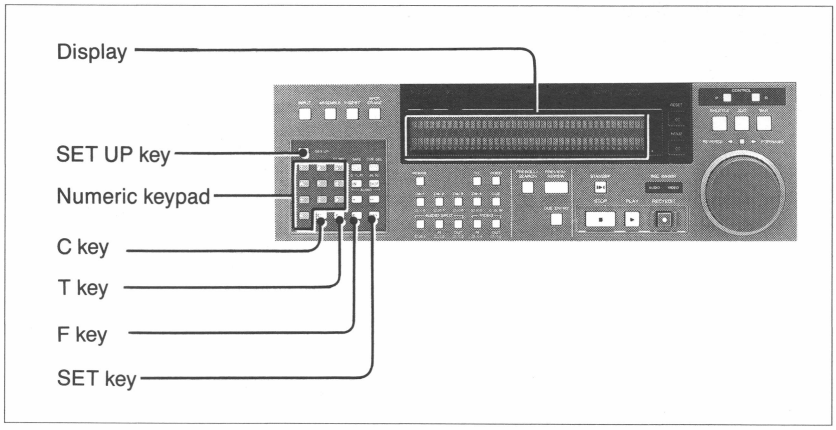
Controls used to set the time code generator start value

Operating sequence


Operation
Examples
Display the current time code generator value in block 1 (see page 3-2).
TCG 01:00:27:21
Press the SET UP key to exit SET UP mode.
Enter the required time code generator start value.
Enter 00003000 on the numeric keypad, and press the SET key.
The entered data appears in block 4.
TCG 01:00:27:21
SET 00 00 30 00
Yes
Is the entered value correct ?
No
Press the C key to cancel, then re-enter.
Press the T key to transfer the setting from block 4 to block 1.
TCG 00:00:30:00
End

To stop the time code generator while making time code settings
On menu item S52 TC GEN RUN MODE, select REC. This will temporarily stop the time code generator until the unit is put into recording mode, making time code setting easier.

Setting the user bit data



Controls used to set the user bit data

Operating sequence

Operation | **Examples**

Display the current user bit generated value in block 1 *(see page 3-2)*.

UBG 01 00 30 15	

Press the SET UP key to exit SET UP mode.

Enter the required user bit data value.

Enter 0A002010 on the numeric keypad, and press the SET key. (*See footnote for how to enter hexadecimal 'A'.*)

The entered data appears in block 4.

UBG 01 00 30 15	
	SET 0A 00 20 10

Is the entered value correct ?

Yes

No

Press the C key to cancel, then re-enter.

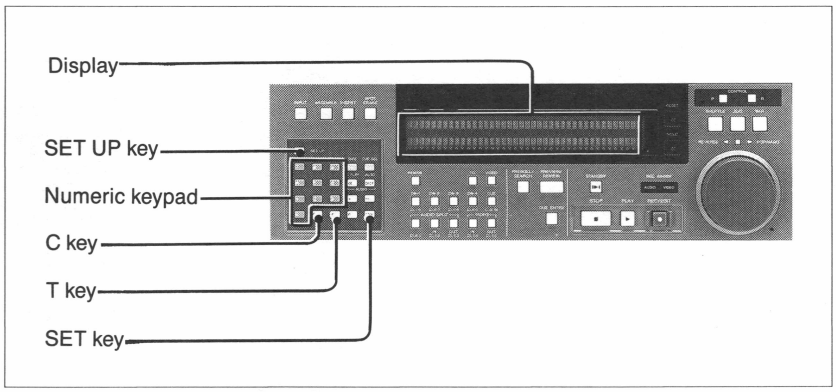
Press the T key to transfer the setting from block 4 to block 1.

UBG 0A 00 20 10	

End

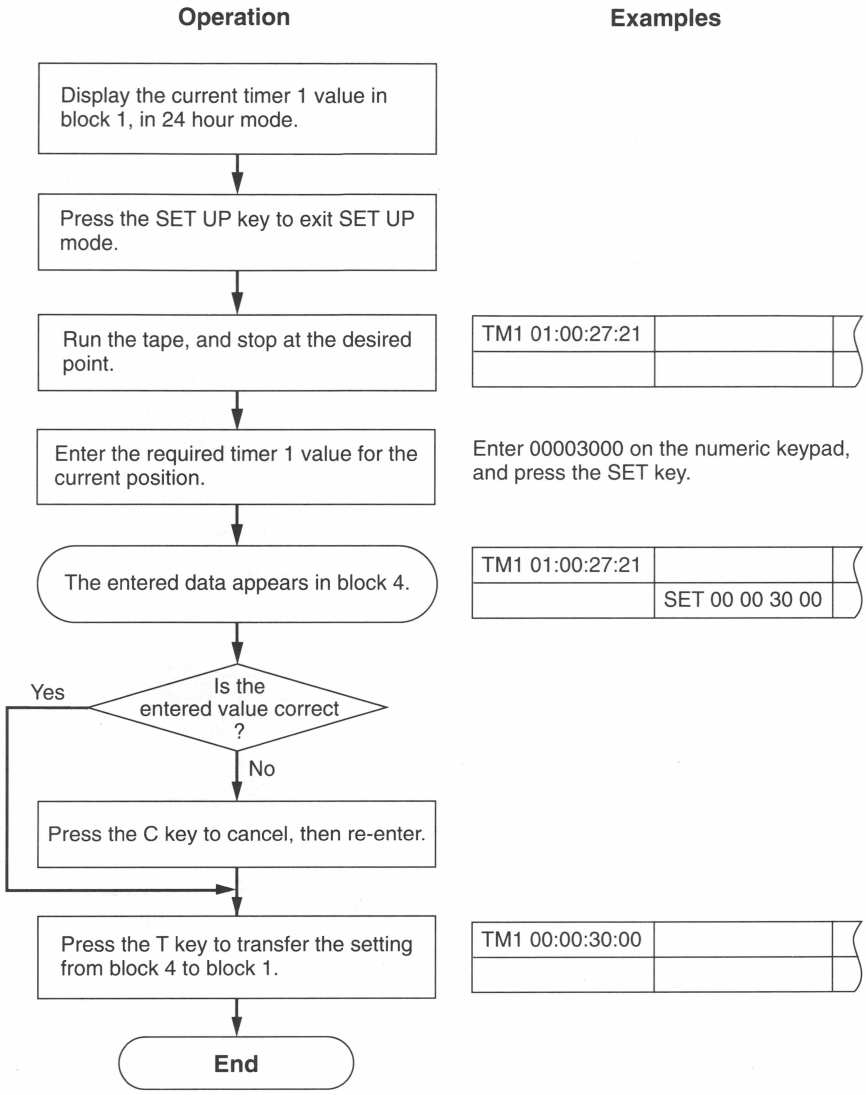
Hexadecimal digits A to F
To enter the hexadecimal digits for 10 to 15, hold down the F key and press the corresponding numeric key 0 to 5.

Setting the start value for timer 1



Controls used to set the start value for timer 1

Operating sequence

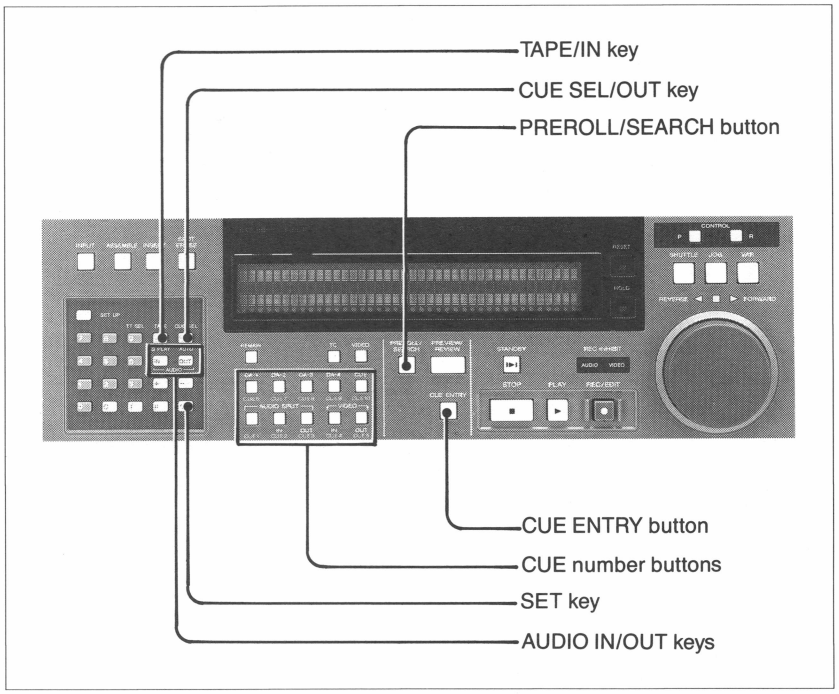

Operation
Examples
Display the current timer 1 value in block 1, in 24 hour mode.
Press the SET UP key to exit SET UP mode.
Run the tape, and stop at the desired point.
TM1 01:00:27:21
Enter the required timer 1 value for the current position.
Enter 00003000 on the numeric keypad, and press the SET key.
The entered data appears in block 4.
TM1 01:00:27:21
SET 00 00 30 00
Yes
Is the entered value correct ?
No
Press the C key to cancel, then re-enter.
Press the T key to transfer the setting from block 4 to block 1.
TM1 00:00:30:00
End

24-hour indication
Set menu item I54 TIMER DISPLAY MODE to 24H. In 12-hour display mode, you cannot preset the timer.

Flashing "DATA ERR"
This message will flash in block 6 if an impossible time is entered.

3-1-3. Multi-cue Operations

This unit allows a maximum of ten cue points to be set. You can then find them easily. When carrying out cue operations other than clearing cue point data or end-of-source data, first press the CUE SEL/OUT key in the 21-key section so that the CUE SEL indicator is lit. When a cue point entry is possible, the CUE ENTRY button will light.



Controls used for multi-cue operations

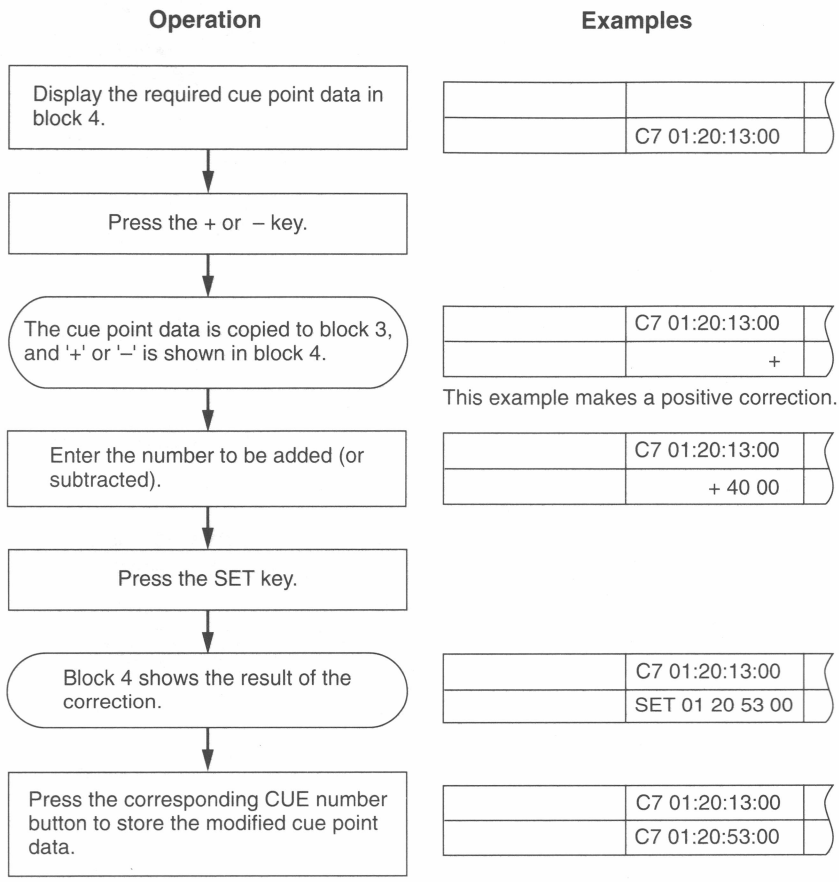
Entering a number of cue points sequentially
During recording or playback, press the CUE ENTRY button. Each time it is pressed, the current tape address is stored as a cue point. The corresponding CUE number button will light, and the CUE number button for the next cue will flash. Thus the cue points can be entered sequentially from cue 1. If the CUE ENTRY button is pressed after setting cue 10, next the entry for cue 1 will be rewritten, and the cycle will be repeated.

End of source
The last recording OUT point is called "the end-of-source point," and the time data for that point "the end-of-source data."

Entering a particular cue number for a particular cue point
Except in STOP or PREROLL/SEARCH mode, pressing one of the buttons CUE 1 to CUE 10 will set the corresponding cue point to the current tape address. Any existing setting for that cue point will be overwritten.
In STOP mode, press the SET key in the 21-key section before pressing the required CUE number button. This will store the data shown in block 4 as the corresponding cue point data.

Displaying cue point addresses
In STOP mode (with the CUE SEL indicator on), press the corresponding CUE number button. This will display the cue point address in block 4.
It is also possible to alter the value displayed in block 4, and store it as a modified cue point value, using the following procedure.

Modifying cue point data


Operation
Examples
Display the required cue point data in block 4.
C7 01:20:13:00
Press the + or – key.
The cue point data is copied to block 3, and '+' or '–' is shown in block 4.
C7 01:20:13:00
+
This example makes a positive correction.
Enter the number to be added (or subtracted).
C7 01:20:13:00
+ 40 00
Press the SET key.
Block 4 shows the result of the correction.
C7 01:20:13:00
SET 01 20 53 00
Press the corresponding CUE number button to store the modified cue point data.
C7 01:20:13:00
C7 01:20:53:00

Entering cue addresses as IN/OUT points
When a cue address is displayed in block 4 (using the procedure described on page 3-8), it can also be saved as an editing IN or OUT point. To do this, press the SET key in the 21-key section, then press the required one of the IN, OUT, AUDIO IN and AUDIO OUT keys in the 21-key section. Data saved in this way can be recalled later.
See page 3-39 "Recalling and modifying IN and OUT points."

Searching for a cue point
To position the tape at the last cue point entered, press the PREROLL/SEARCH button.
To find a particular cue point, press the corresponding CUE number button while the PREROLL/SEARCH button is lit. The preroll time when searching for a cue point is independent of the editing preroll time, and can be set in the range 0 to 30 seconds by menu item I14 SEARCH PREROLL TIME.

Deleting cue point data and end-of-source data
To delete all of the cue point data and end-of-source data entries, press the STOP button and the CUE ENTRY button simultaneously. You can delete them even when the CUE SEL indicator is off.

3-1-4. Character Superimposition

The VIDEO MONITOR OUT connector on the connector panel can be used to output a video signal with superimposed characters for display on the monitor. The characters superimposed can be:

- value shown in block 1 (time code, user bit data, timer 1 data, timer 2 data, or tape remaining)
- field number
- error messages
- second line of display data selected with menu item I65 CHARA DISP (EXTEND)
- menu display (depending on the setting of menu item I66 MENU DISPLAY)

Menu items used for character superimposition

- **S59 MIXED CHARA OUTPUT**
  Select whether or not to output superimposed characters on the video signal from the VIDEO MONITOR OUT connector.

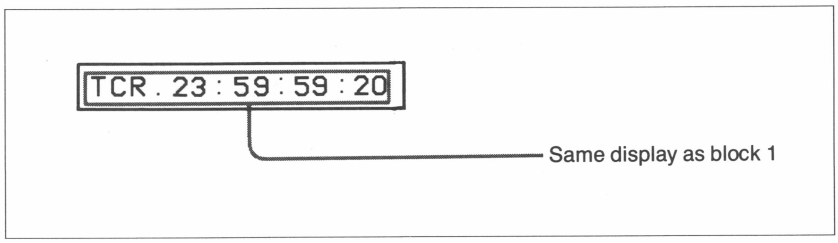
- **I61 CHARACTER SIZE ADJ**
  I62 CHARA V. POSITION ADJ
  I63 CHARA H. POSITION ADJ
  I64 CHARA DISPLAY MODE
  Select the size, vertical position, horizontal position and style for characters superimposed on the picture, and whether or not to include error messages.
  Items I61 to I63 do not affect the display of the menu on the screen.

- **I65 CHARA DISP (EXTEND)**
  Select whether to display a second line or not, and if so what data is displayed in the second line.

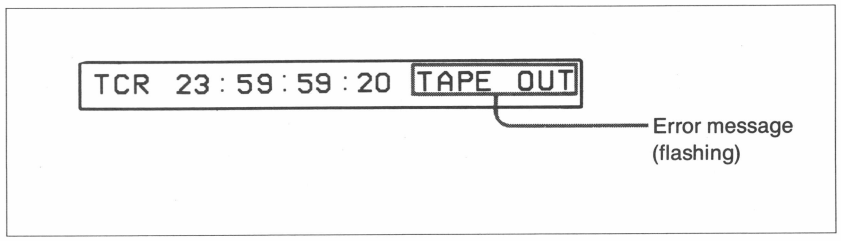
- **I66 MENU DISPLAY**
  Select whether to superimpose the menu display on the video signal from the VIDEO MONITOR OUT connector (when S59 MIXED CHARA OUTPUT is set to ENABLE). When the menu display is enabled, it is superimposed whenever the SET UP key is pressed and the unit is in SET UP mode.

Display examples

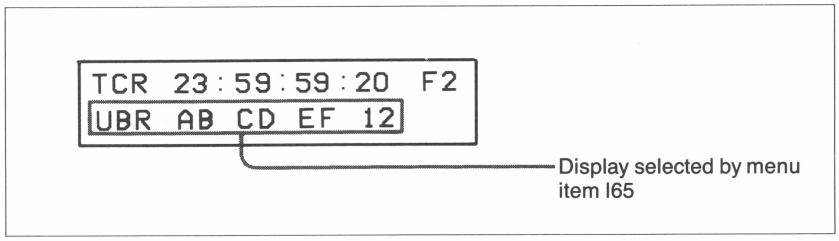
- **One-line display with no error message**



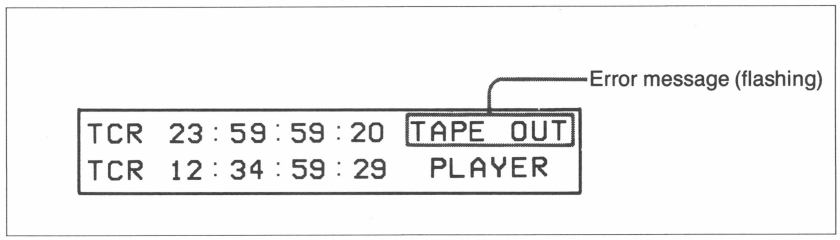
- **One-line display including an error message**



- **Two-line display with no error message**



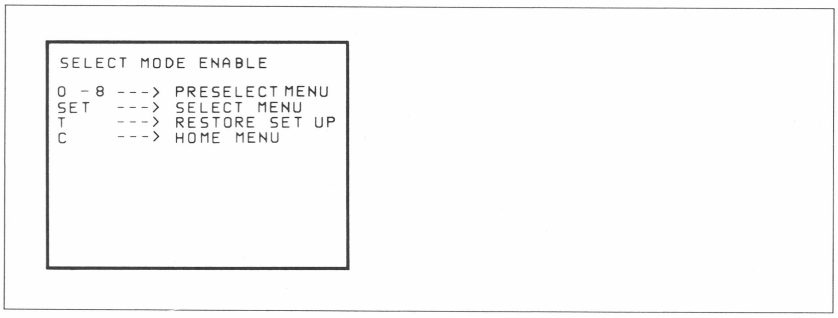
- **Two-line display including an error message**



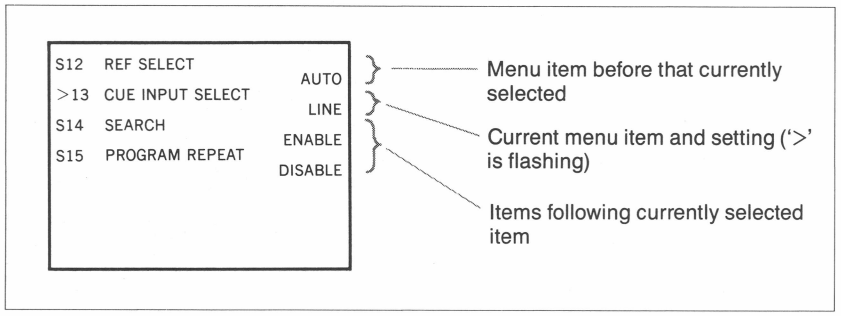
Menu display examples

The menu selection method is the same as in normal menu operations. While a menu is displayed, character superimposition in one-line or two-line display mode does not take place.

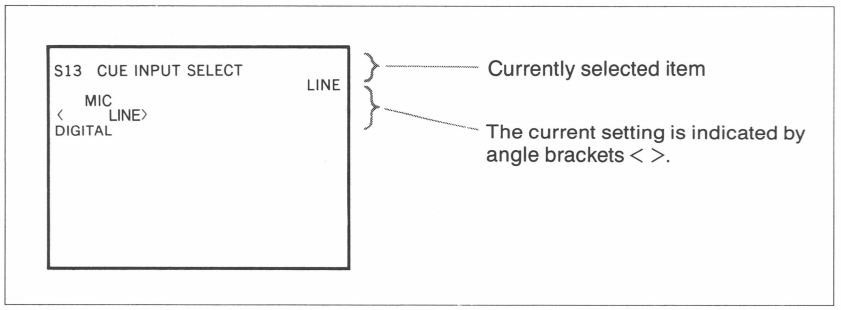
Display after pressing the SET UP key to change to SET UP mode



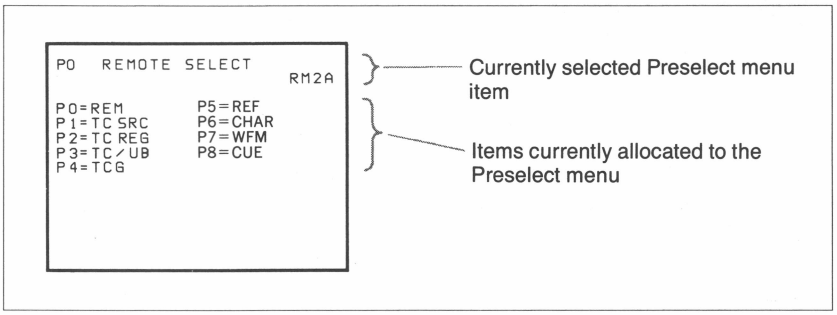
Select menu display
(The Initial Setup and Test menus are displayed similarly.)



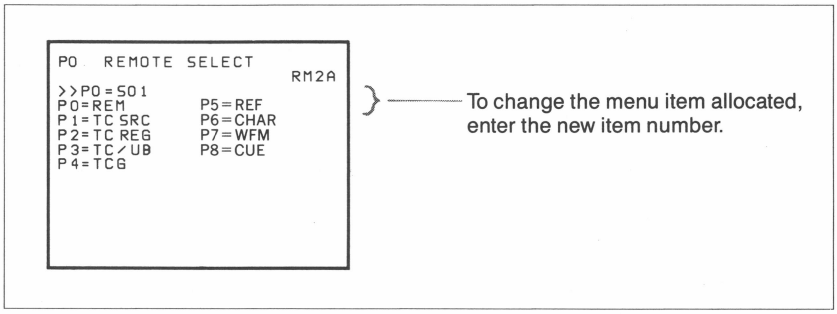
To change the setting of the current item, press the SET key, and the following display will appear.



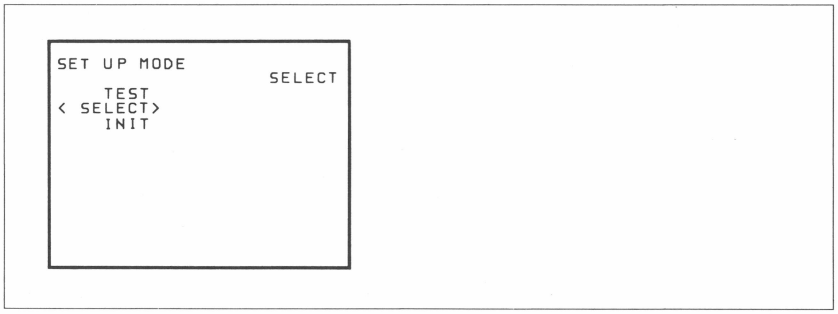
Preselect menu display



Display when the F key is pressed to change the Preselect menu allocation



Home menu display



3-1-5. Freeze Frames

A freeze picture outputs when you press the STOP button in PLAY mode while the TAPE indicator lit. However, if you press the HOLD button in FREEZE mode, the freeze picture is always sent regardless of the TAPE lamp status.

Use menu item S04 FREEZE MODE to select the whole frame, or field 1 or field 2 for freeze output.
When a freeze frame picture is output, "FREEZE" appears in block 6 of the display.

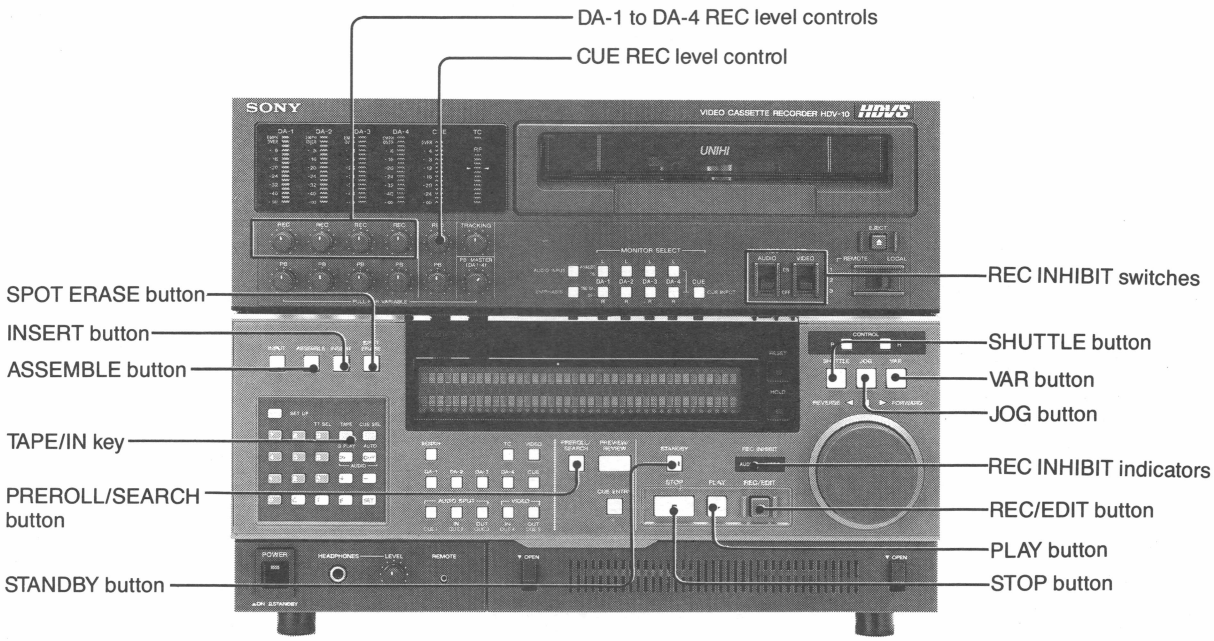
Program repeat mode
When S04 FREEZE MODE is set to PROG F1, PROG F2, or PROG FR, the unit will enter program freeze mode. The value of the IN point with one frame added is automatically set as the OUT point when you specify the IN point while the AUTO lamp is lit. At the same time, the freeze picture of the field 1, field 2, or frame will be sent when the tape reaches the IN point when you press the PREVIEW button.
The freeze picture will be sent when you press the STOP or HOLD button in the same way that you select FIELD 1, FIELD 2, FRAME.

Notes

- When menu item S04 FREEZE MODE is set to DISABLE, no freeze frame picture is output.
- If a freeze is carried out other than in PLAY mode, the picture may have distortion. In this case, "FREEZE" doesn't appear in the display.
- When menu item I65 CHARA DISP (EXTEND) is set to FRZ TM, the address of freeze frame picture is superimposed over the display of the monitor.

Still off timer
In still mode, the tape remains wound round the drum while the drum is rotating. Setting the still off timer will cause the unit to switch from still mode after the specified time has elapsed, reducing wear on the tape.
Use menu item I12 STILL OFF TIMER to make the setting. When the unit is shipped, it is set to 3 minutes.

3-2. Recording



Controls used for recording

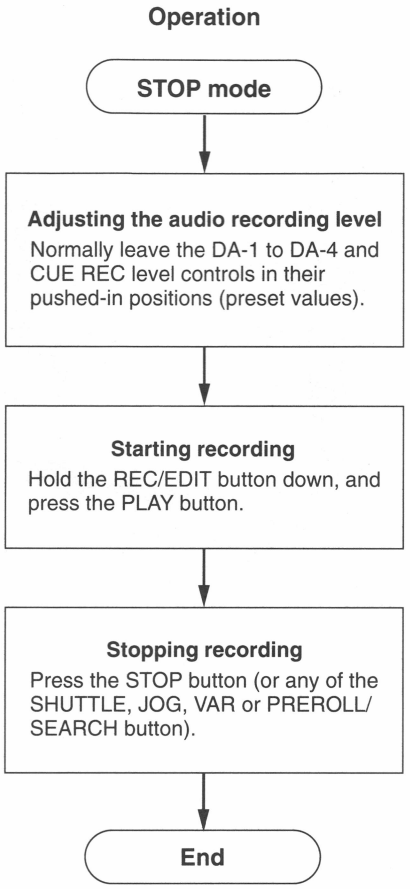
Notes on recording operations

- Check that both audio and video REC INHIBIT indicators are off. If either is on, switch off the corresponding REC INHIBIT switch on the level control panel, and check that the record-inhibit key on the cassette is set to the record-enable position.
- Check that all of the ASSEMBLE, INSERT and SPOT ERASE buttons are off.
- To ensure optimum recording conditions, avoid using the first and last 30 seconds' portions of the cassette tape.

Selecting the signals to be monitored

- Select the video signal to be monitored with the TAPE/IN key in the 21-key section.
- Select the audio signal to be monitored with the MONITOR SELECT button.

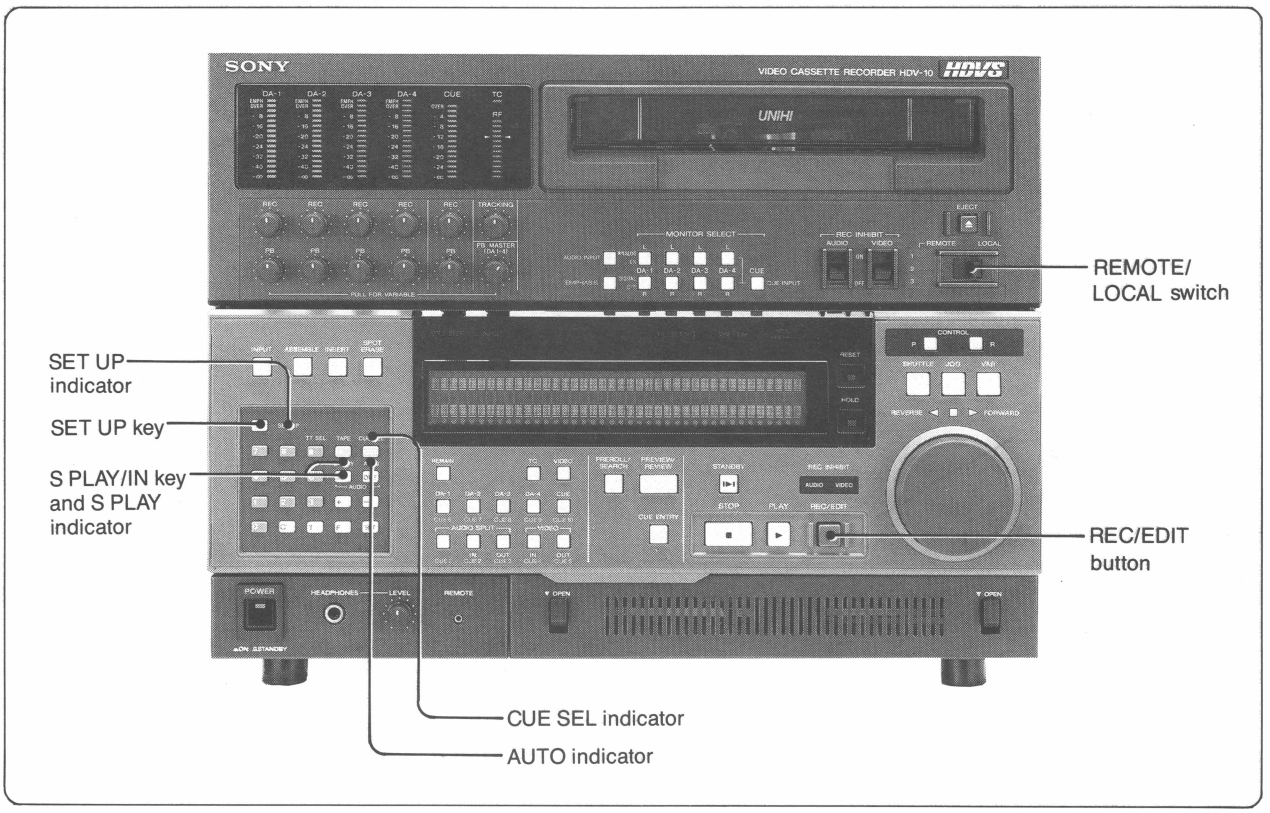
3-2-1. Basic Operating Sequence


Operation
Remarks
STOP mode
Adjusting the audio recording level
Normally leave the DA-1 to DA-4 and CUE REC level controls in their pushed-in positions (preset values).
See Section 3-1-1 "Level Control Panel" for how to adjust these levels manually.
Starting recording
Hold the REC/EDIT button down, and press the PLAY button.
The STANDBY, REC/EDIT and PLAY buttons will all light.
Stopping recording
Press the STOP button (or any of the SHUTTLE, JOG, VAR or PREROLL/ SEARCH button).
End

3-2-2. Synchronized Sequential Recording Mode

Recording with two HDV-10 units

Two HDV-10 units can be used for continuous audio and video recording on a number of cassettes, with automatic switching between the units at the end of each cassette.



Controls used for synchronized sequential recording

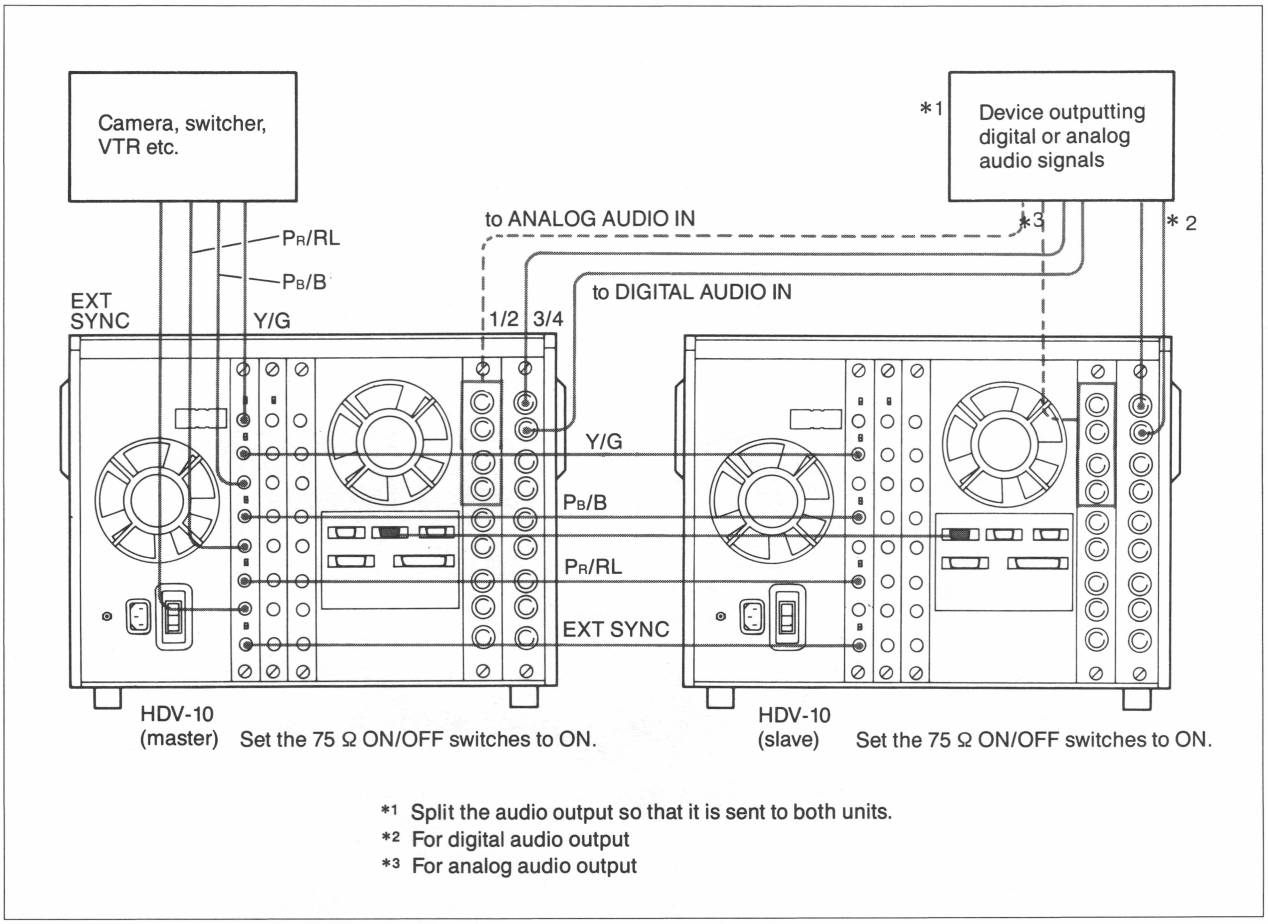
Connecting two units and setting up

1 Connect the REMOTE-2A OUT connector on the master unit (the one which will be used to control the operation) to the REMOTE-2A IN connector on the slave unit.

2 Input the video and audio signals to both units, and load a cassette in each.

3 Set these items on both units as follows:

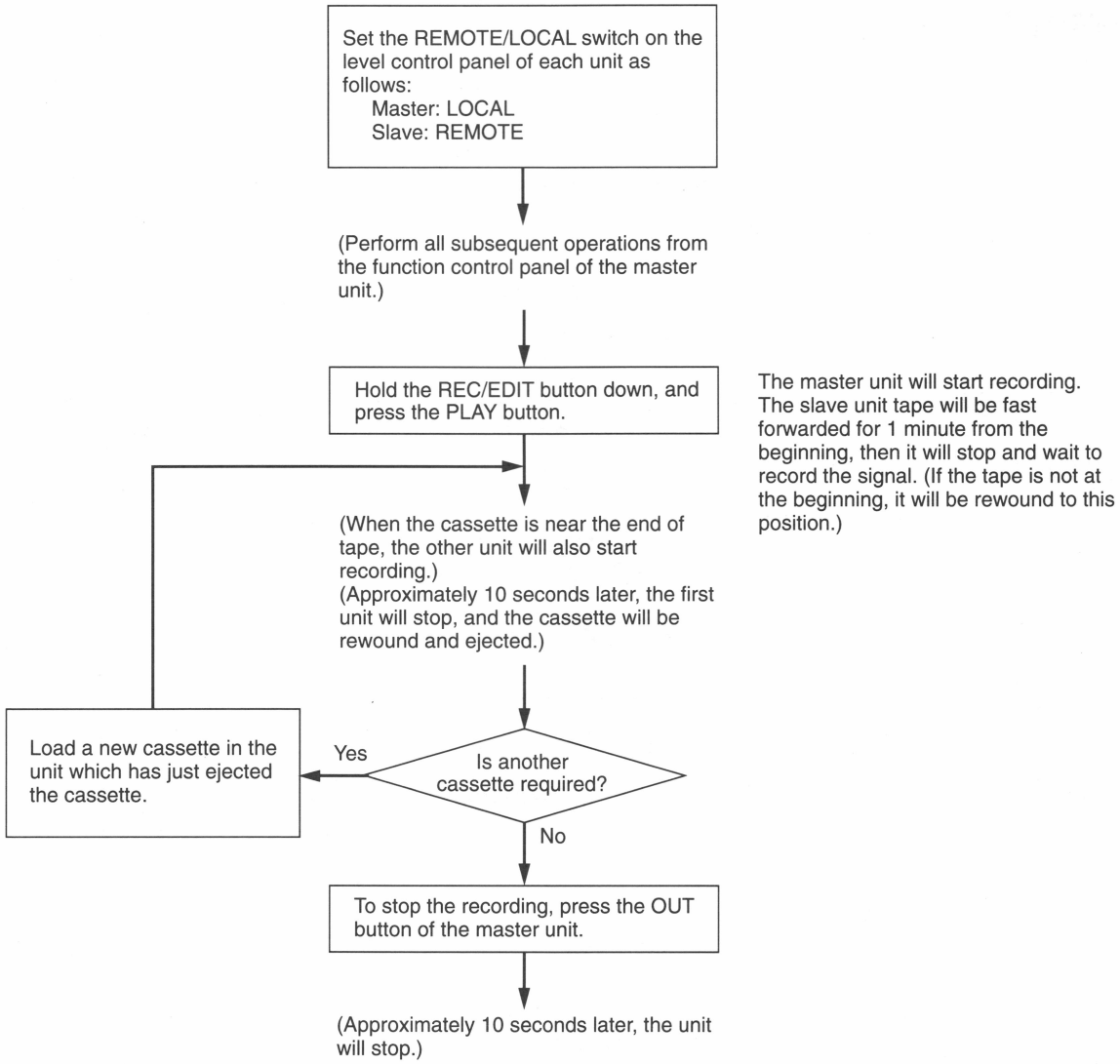
Menu number	Item	Setting
S51	TIME CODE SOURCE	INT
S52	TC GEN RUN MODE	FREE
S55	TC REGEN/PRESET SEL	PRESET or AUTO



Connections for synchronized sequential recording

Operating Sequence

Operation	Remarks
STOP mode	
Press the SET UP keys of both units.	The SET UP indicator will flash.
Check that the CUE SEL indicators and the AUTO indicators of both units are off.	If they are on, turn them off. Particularly, the CUE SEL indicator must be off except when carrying out multi-cue operation.
Press the S PLAY/IN keys of both units.	The S PLAY indicator will light.
Press the SET UP keys of both units again.	The SET UP indicator will go off.


Set the REMOTE/LOCAL switch on the level control panel of each unit as follows:
Master: LOCAL
Slave: REMOTE
(Perform all subsequent operations from the function control panel of the master unit.)
Hold the REC/EDIT button down, and press the PLAY button.
The master unit will start recording. The slave unit tape will be fast forwarded for 1 minute from the beginning, then it will stop and wait to record the signal. (If the tape is not at the beginning, it will be rewound to this position.)
(When the cassette is near the end of tape, the other unit will also start recording.)
(Approximately 10 seconds later, the first unit will stop, and the cassette will be rewound and ejected.)
Load a new cassette in the unit which has just ejected the cassette.
Yes
Is another cassette required?
No
To stop the recording, press the OUT button of the master unit.
(Approximately 10 seconds later, the unit will stop.)

Notes

- The time code address for 10 seconds after recording starts is recorded on the tape as the program start cue. Always, therefore, start recording 10 seconds before the program starts.
- Pressing the STOP button during the recording will stop recording immediately, but the tape will not be rewound. In this case no program end cue will be recorded, and if used for synchronized sequential playback, the tape will not stop automatically at this point.

Recording from HDD-1000

Records a continuous program for the synchronized sequential recording mode edited by the HDD-1000.

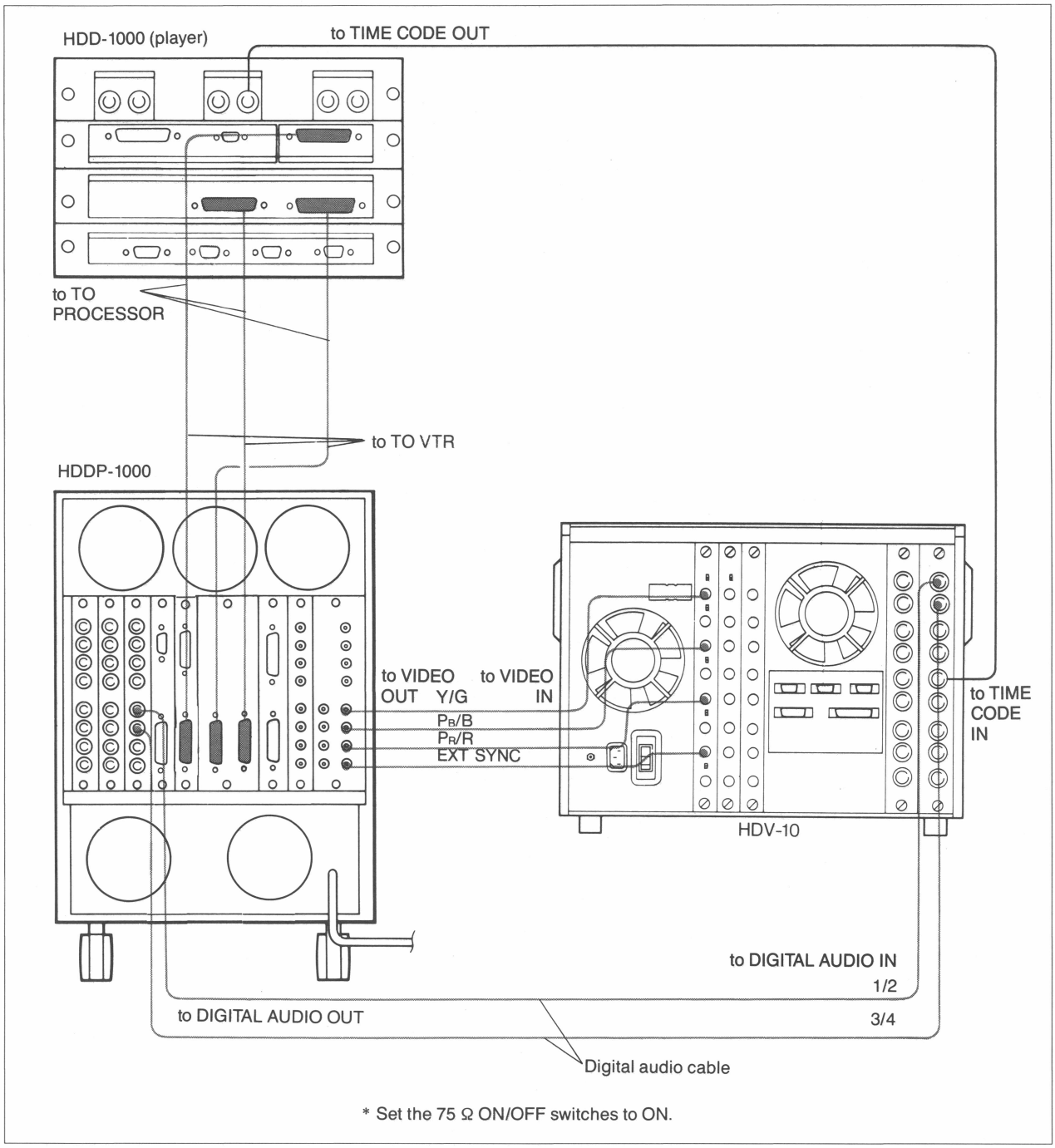
Notes: how to make a Master tape using the HDD-1000 editing operation

- Record the time code 20 seconds* or more before from the desired program start point.
- The time code should continue from the first to the last tape.
- Overlap the program 10 seconds or more between the tape end point and the next tape start point. Overlap the time code 20 seconds* or more from the next tape start point.

  * We recommend that you record it about 2 minutes before the desired program start point.

Connecting and setting up

1. Connect the TIME CODE IN connector on the HDV-10 to the TIME CODE OUT connector on the HDD-1000.
2. Connect the VIDEO IN connector and the DIGITAL AUDIO IN connector on the HDV-10 to the VIDEO OUT connector and the DIGITAL AUDIO OUT connector on the HDDP-1000.
3. Connect the TO PROCESSOR connector on the HDD-1000 to the TO VTR connector on the HDDP-1000.
4. Set the item S51 TIME CODE SOURCE to EXT.
5. Inhibit recording of audio and video with the REC INHIBIT switch on the HDD-1000.
6. Set the item S55 TC REGEN/PRESET SEL to REGEN.



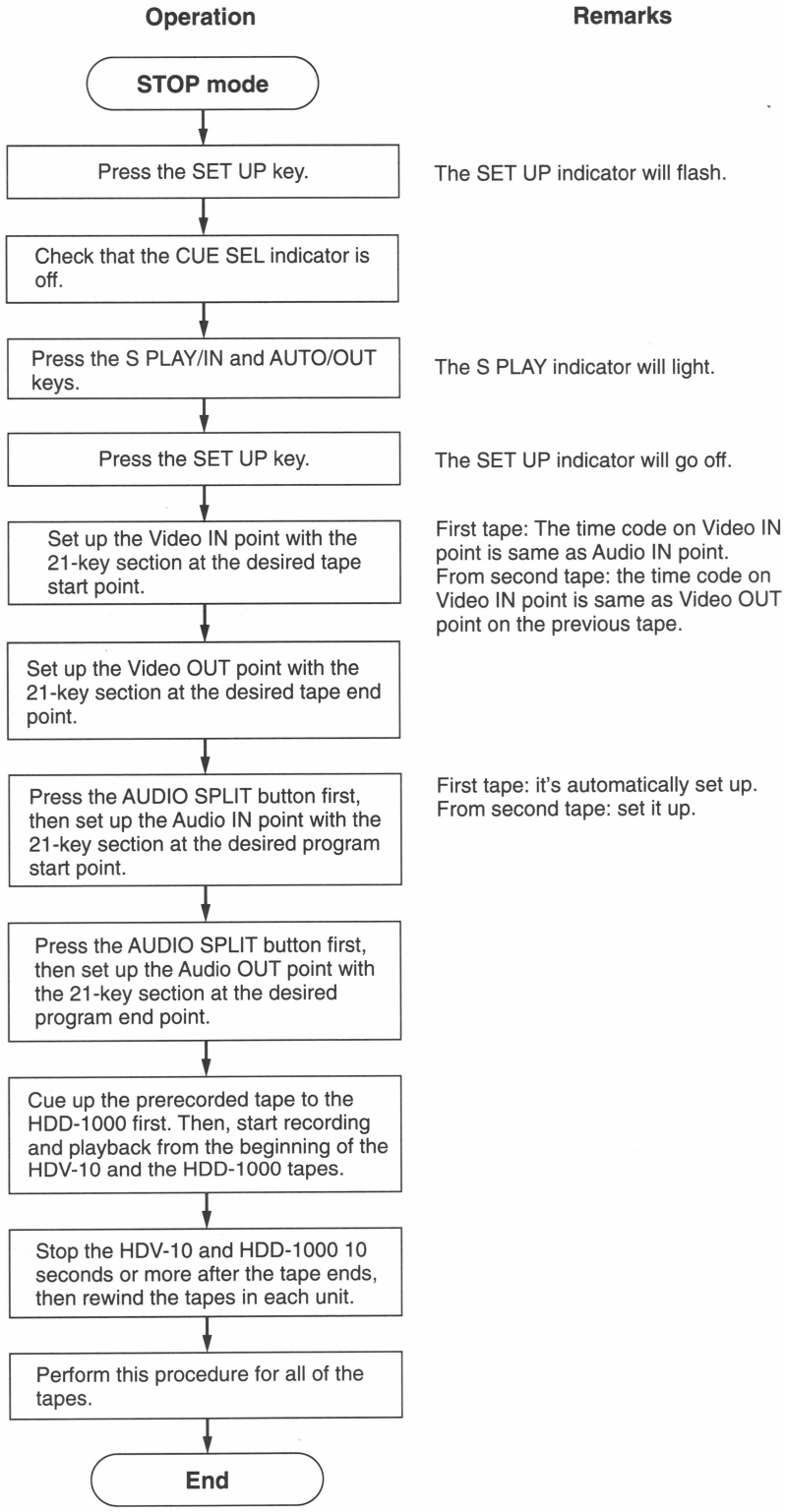
Connecting an HD digital VTR (HDD-1000)

Notes

- The EXT SYNC connection is not necessarily required, but it will ensure stabler system performance.
- Select the input or output video signal whose type is Y/PB/PR.

Operating sequence

Perform operation mainly in the HDV-10.

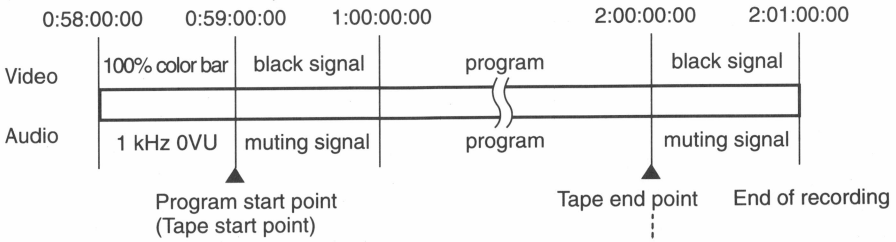

Operation
Remarks
STOP mode
Press the SET UP key.
The SET UP indicator will flash.
Check that the CUE SEL indicator is off.
Press the S PLAY/IN and AUTO/OUT keys.
The S PLAY indicator will light.
Press the SET UP key.
The SET UP indicator will go off.
Set up the Video IN point with the 21-key section at the desired tape start point.
First tape: The time code on Video IN point is same as Audio IN point.
From second tape: the time code on Video IN point is same as Video OUT point on the previous tape.
Set up the Video OUT point with the 21-key section at the desired tape end point.
Press the AUDIO SPLIT button first, then set up the Audio IN point with the 21-key section at the desired program start point.
First tape: it's automatically set up.
From second tape: set it up.
Press the AUDIO SPLIT button first, then set up the Audio OUT point with the 21-key section at the desired program end point.
Cue up the prerecorded tape to the HDD-1000 first. Then, start recording and playback from the beginning of the HDV-10 and the HDD-1000 tapes.
Stop the HDV-10 and HDD-1000 10 seconds or more after the tape ends, then rewind the tapes in each unit.
Perform this procedure for all of the tapes.
End

Example of recording a Master tape in the HDD-1000 (Program time is 3 hours: record 1 tape per hour.)

First tape: Start recording at 0 : 57 : 45 : 00.

(Record the program from 1 : 00 : 00 : 00 to 2 : 00 : 00 : 00.)

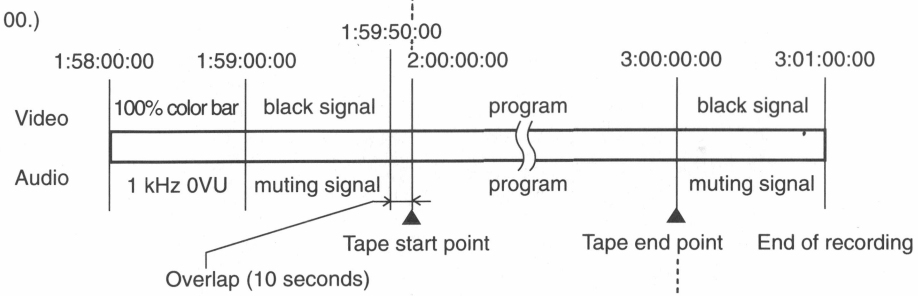
Video IN point 1 : 00 : 00 : 00
Video OUT point 2 : 00 : 00 : 00
(Audio IN point 1 : 00 : 00 : 00)
Audio OUT point 4 : 00 : 00 : 00



Second tape: Start recording at 1 : 57 : 45 : 00.

(Record the program from 1 : 59 : 50 : 00 to 3 : 00 : 00 : 00.)

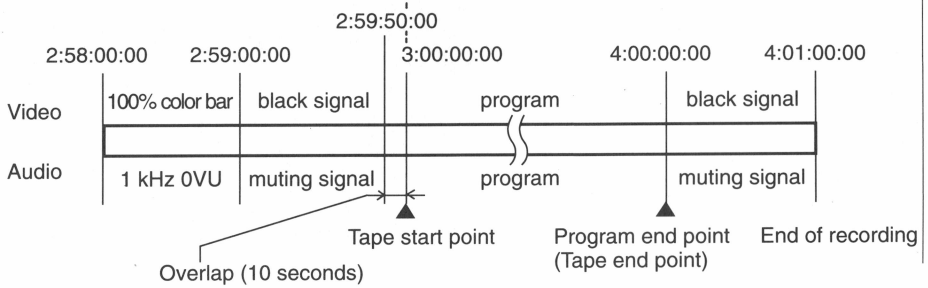
Video IN point 2 : 00 : 00 : 00
Video OUT point 3 : 00 : 00 : 00
Audio IN point 1 : 00 : 00 : 00
Audio OUT point 4 : 00 : 00 : 00



Last tape: Start recording at 2 : 57 : 45 : 00.

(Record the program from 2 : 59 : 50 : 00 to 4 : 00 : 00 : 00.)

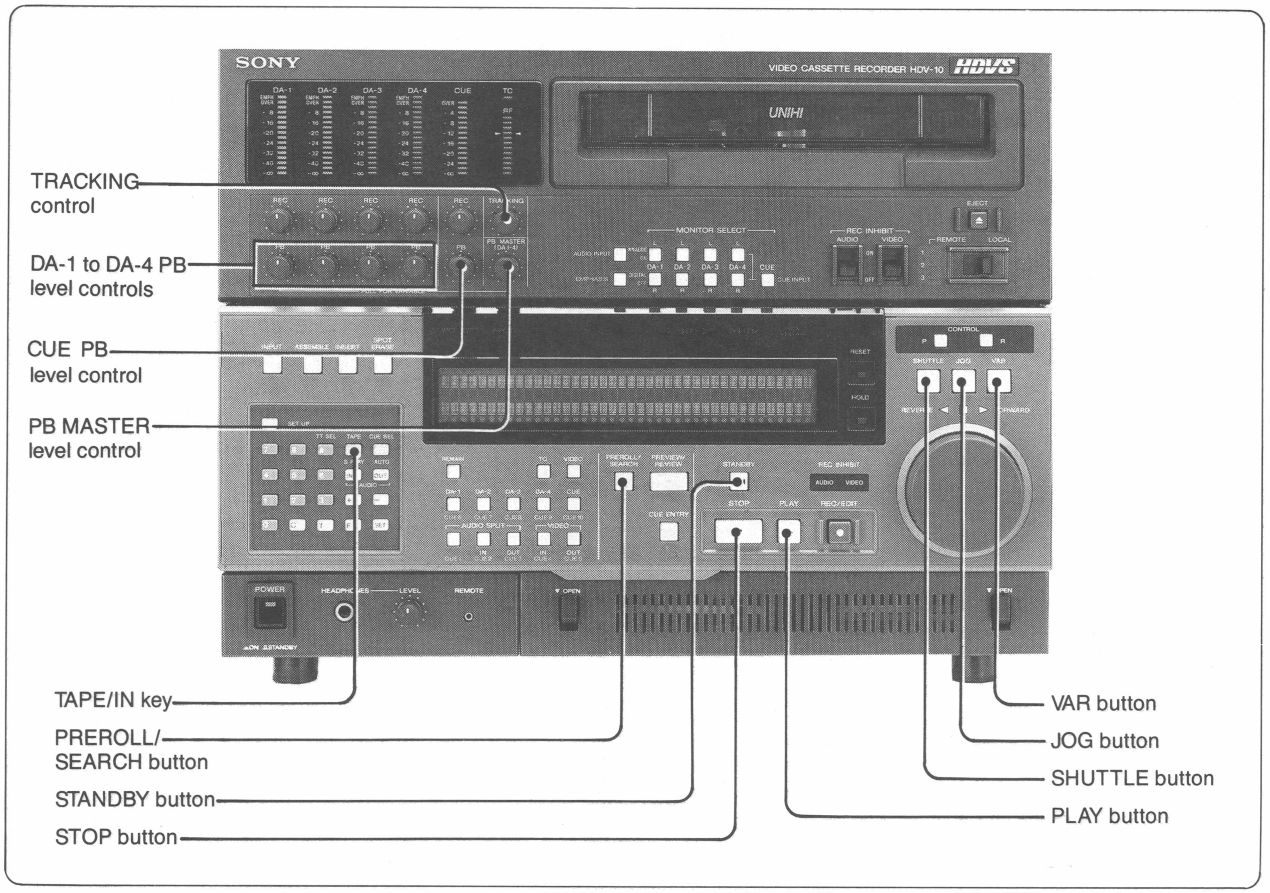
Video IN point 3 : 00 : 00 : 00
Video OUT point 4 : 00 : 00 : 00
Audio IN point 1 : 00 : 00 : 00
(Audio OUT point 4 : 00 : 00 : 00)



3-3. Playback

This section describes the various playback modes:

- Normal playback
- SHUTTLE mode
- JOG mode
- PROGRAM JOG mode
- Capstan override mode
- Synchronized sequential playback mode
- PROGRAM REPEAT playback mode



Controls used for playback

3-3-1. Normal Speed Playback

Operating sequence

Operation	Remarks
STOP mode	
Adjusting the video and audio output levels Normally leave the PB MASTER, DA-1 to DA-4 and CUE PB level controls and the TRACKING control in their pushed-in positions (preset values).	*See Section 3-1-1 "Level Control Panel" for how to adjust these controls manually.*
Starting playback Press the PLAY button.	The STANDBY and PLAY buttons will light.
Stopping playback Press the STOP button (or any of the SHUTTLE, JOG, VAR or PREROLL/ SEARCH button).	
End	

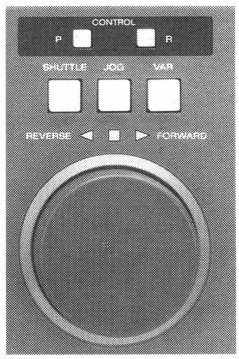
3-3-2. SHUTTLE Mode

In SHUTTLE mode, the position of the search dial determines the playback speed, in a range from ±1/32 to ±32 times normal speed. (FF or REW are displayed if the playback speed is more than 32 times normal speed.)

Note

If the playback speed is in excess of ±8 times normal speed, it may be difficult to follow the content of the video.

Operating sequence

Operation	Remarks
Start	
Press the SHUTTLE button, turning it on, then rotate the search dial. 	• The central position of the search dial gives a still picture. • The search dial clicks at three points: the central position, FF, and REW. • If the time set in menu item I12 STILL OFF TIMER elapses after entering still mode, the unit will automatically switch to STOP mode. • During fast forward or rewind, approaching either end of the tape, the unit will automatically reduce speed, and finally stop.
Press a button other than the SHUTTLE button.	The unit will switch from SHUTTLE mode to the selected mode.
End	

SHUTTLE mode starting

In SHUTTLE mode immediately after starting the unit, the tape transport mechanism starts at a low speed. It will take several seconds before reaching normal speed.

3-3-3. JOG Mode

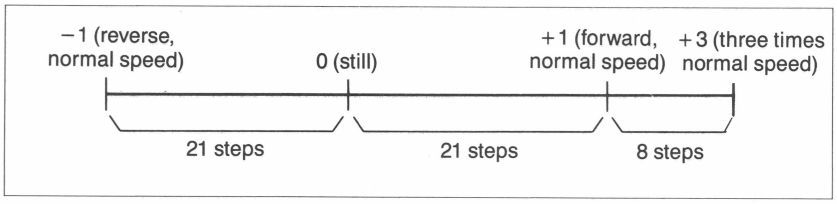
In JOG mode, the playback speed is determined by the speed of rotation of the search dial, in a range from zero to ±3 times normal speed.

Operating sequence

Operation	Remarks
Start	
Press the JOG button, turning it on, then turn the search dial. 	• When the search dial is stationary, the unit outputs a still picture. • There are no clicks on the search dial. • If the time set in menu item I12 STILL OFF TIMER elapses after entering still mode, the unit will automatically enter STOP mode. To avoid this, set menu item I12 to DISABLE.
Press a button other than the JOG button.	The unit will switch from JOG mode to the selected mode.
End	

3-3-4. PROGRAM JOG Mode

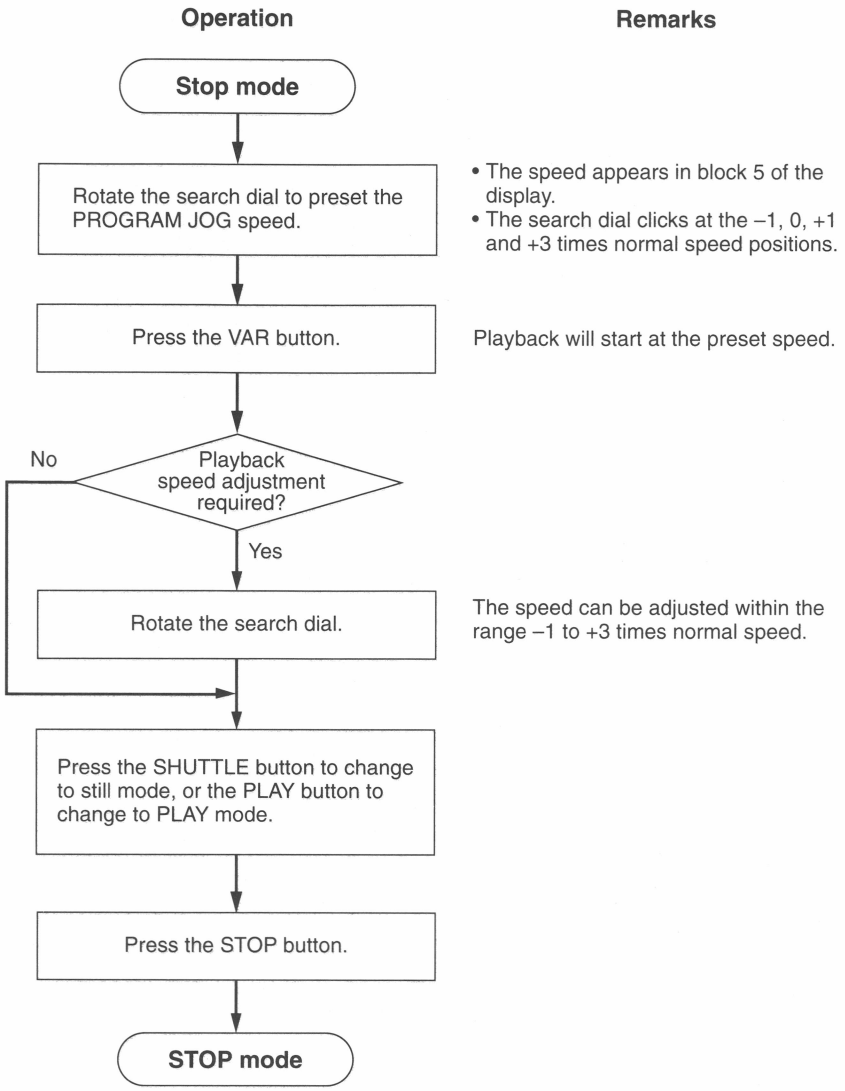
PROGRAM JOG mode allows playback at a preset tape speed. The tape speed is adjustable from −1 to +3 times normal speed, in the 50 steps shown in the following figure.



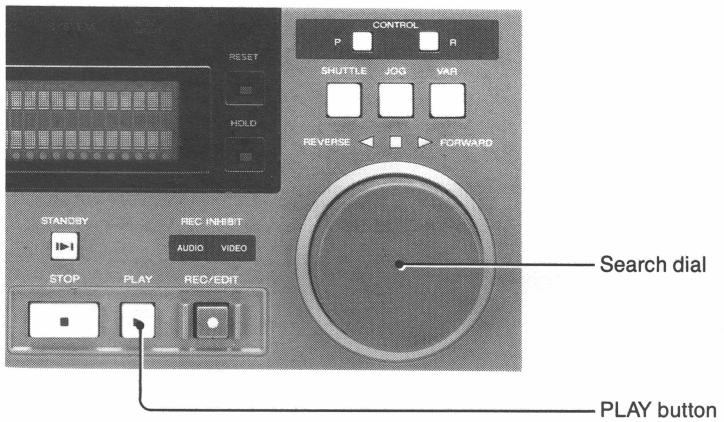
Tape speed adjustable range for PROGRAM JOG mode

In this mode, the speed range is more restricted than in SHUTTLE mode, but finer adjustment is possible.

Operating sequence


Operation
Remarks
Stop mode
Rotate the search dial to preset the PROGRAM JOG speed.
• The speed appears in block 5 of the display.
• The search dial clicks at the −1, 0, +1 and +3 times normal speed positions.
Press the VAR button.
Playback will start at the preset speed.
No
Playback speed adjustment required?
Yes
Rotate the search dial.
The speed can be adjusted within the range −1 to +3 times normal speed.
Press the SHUTTLE button to change to still mode, or the PLAY button to change to PLAY mode.
Press the STOP button.
STOP mode

3-3-5. Capstan Override Mode

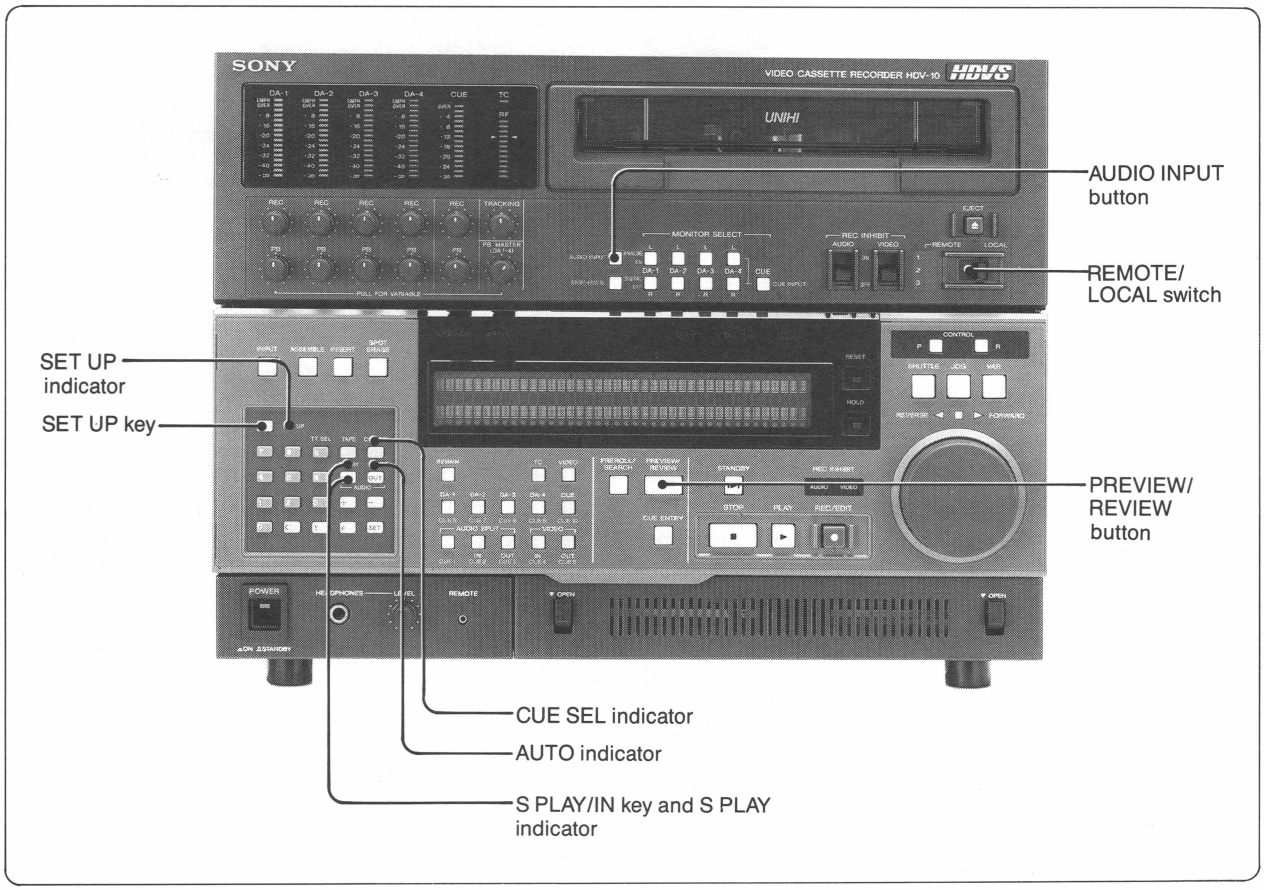


Controls used for capstan override mode

To synchronize the unit with another VTR, rotate the search dial while holding down the PLAY button; you can adjust the playback speed within a range of ±15% of normal speed. Turning the dial clockwise increases the speed, and counterclockwise reduces it. The speed is shown as a percentage of normal speed in block 5 of the display.
Playback continues at the adjusted speed as long as the PLAY button is held down.

3-3-6. Synchronized Sequential Playback Mode

Two HDV-10 units can be used for continuous playback of audio and video recorded in synchronized sequential mode on a number of cassettes, with automatic switching between the units at the end of each cassette.



Controls used for synchronized sequential playback

Connecting two units and setting up

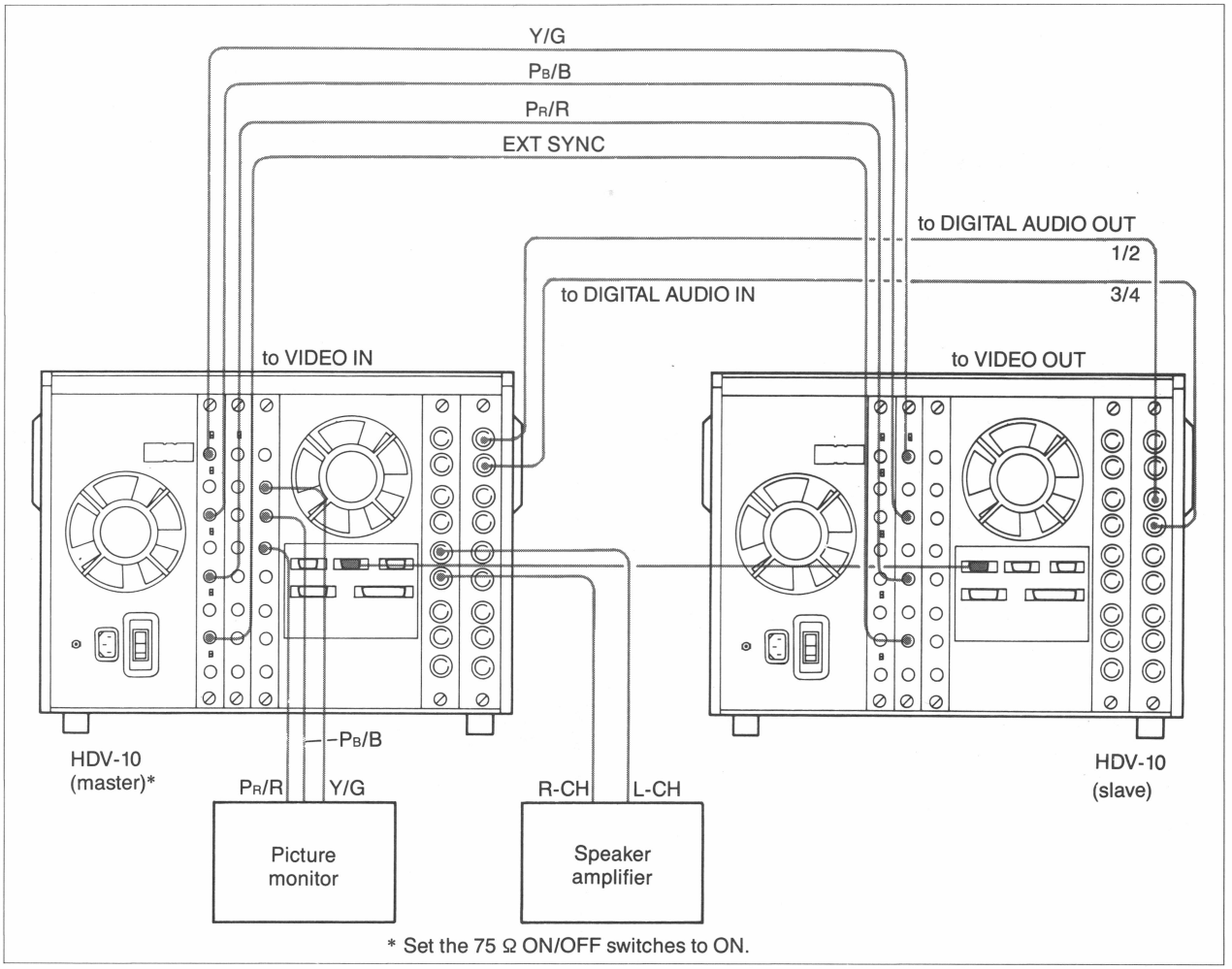
1. Connect the REMOTE-2A OUT connector on the master unit (the one which will be used to control the operation) to the REMOTE-2A IN connector on the slave unit.

2. Connect the VIDEO OUT connectors and DIGITAL AUDIO OUT connectors on the slave unit to the VIDEO IN connectors and DIGITAL AUDIO IN connectors on the master unit.

3. Select digital audio input, by holding down the AUDIO INPUT button, and pressing the buttons in the lower row for the channels (DA-1 to DA-4) to be used.

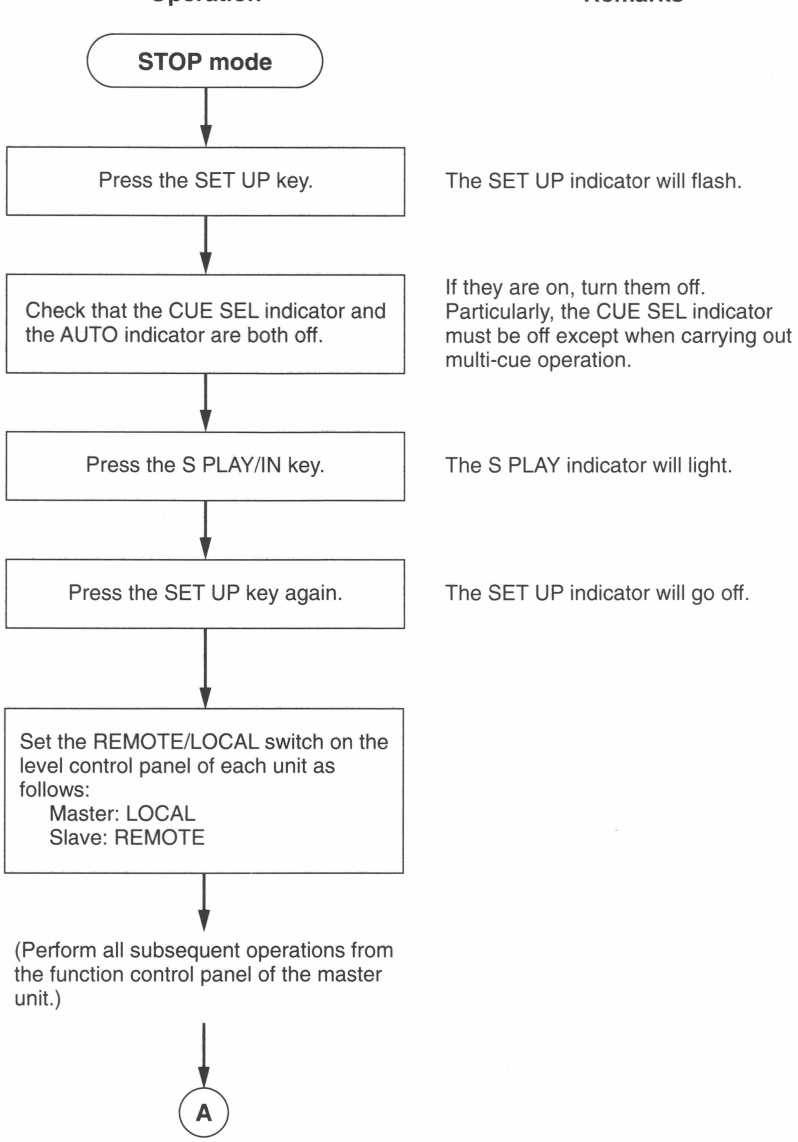
4 Connect the VIDEO MONITOR OUT connectors or VIDEO OUT connectors of the master unit to the picture monitor, and the ANALOG AUDIO OUT connectors to a speaker amplifier.

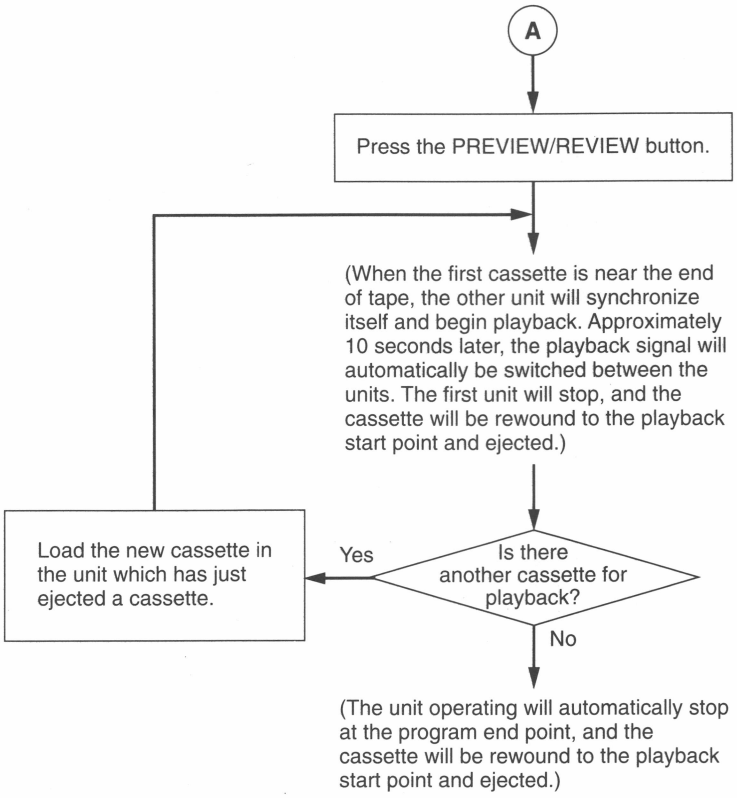
5 Load the first cassette in the master unit and the second cassette in the slave unit.



Connections for synchronized sequential playback

Operating Sequence


Operation
Remarks
STOP mode
Press the SET UP key.
The SET UP indicator will flash.
Check that the CUE SEL indicator and the AUTO indicator are both off.
If they are on, turn them off. Particularly, the CUE SEL indicator must be off except when carrying out multi-cue operation.
Press the S PLAY/IN key.
The S PLAY indicator will light.
Press the SET UP key again.
The SET UP indicator will go off.
Set the REMOTE/LOCAL switch on the level control panel of each unit as follows:
Master: LOCAL
Slave: REMOTE
(Perform all subsequent operations from the function control panel of the master unit.)
A

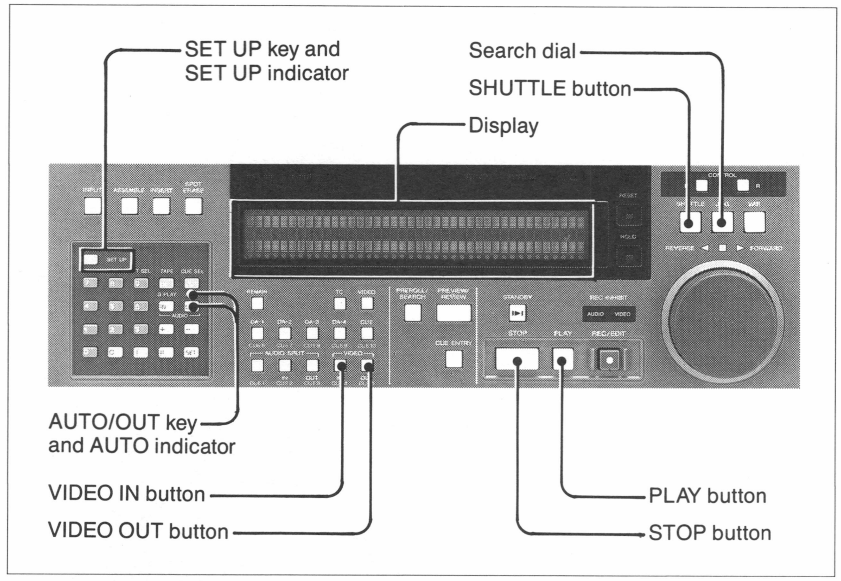

A
Press the PREVIEW/REVIEW button.
Both units will preroll to the program start point, and the master unit will start playback.
(When the first cassette is near the end of tape, the other unit will synchronize itself and begin playback. Approximately 10 seconds later, the playback signal will automatically be switched between the units. The first unit will stop, and the cassette will be rewound to the playback start point and ejected.)
Load the new cassette in the unit which has just ejected a cassette.
Yes
Is there another cassette for playback?
No
(The unit operating will automatically stop at the program end point, and the cassette will be rewound to the playback start point and ejected.)

Note

Pressing the STOP button during the playback will stop playback immediately, but the tape will not be rewound.

3-3-7. PROGRAM REPEAT Playback Mode

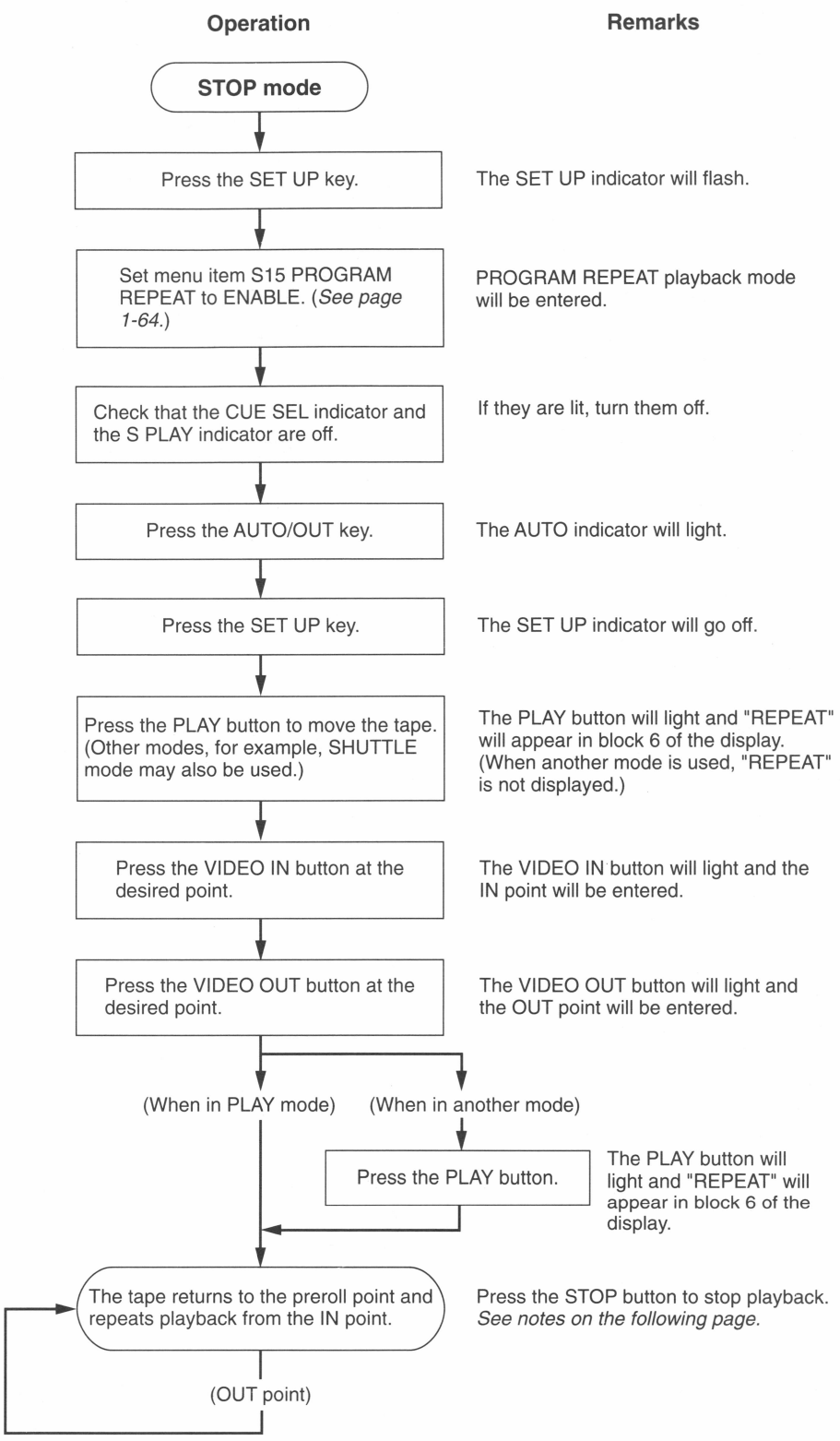
This mode makes it possible to automatically repeat playback of a specified section (defined by the IN and OUT points) of a recorded tape through a simple procedure. This mode will be useful, for example, when using the unit for advertisement or other promotional purposes.



Controls used for PROGRAM REPEAT playback

Operating sequence

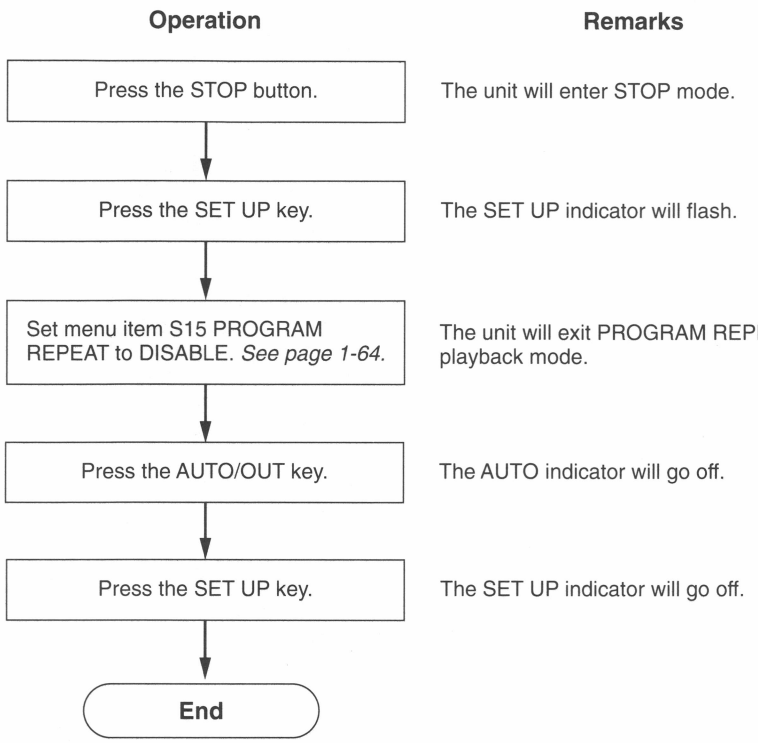
PROGRAM REPEAT playback


Operation
Remarks
STOP mode
Press the SET UP key.
The SET UP indicator will flash.
Set menu item S15 PROGRAM REPEAT to ENABLE. (See page 1-64.)
PROGRAM REPEAT playback mode will be entered.
Check that the CUE SEL indicator and the S PLAY indicator are off.
If they are lit, turn them off.
Press the AUTO/OUT key.
The AUTO indicator will light.
Press the SET UP key.
The SET UP indicator will go off.
Press the PLAY button to move the tape. (Other modes, for example, SHUTTLE mode may also be used.)
The PLAY button will light and "REPEAT" will appear in block 6 of the display. (When another mode is used, "REPEAT" is not displayed.)
Press the VIDEO IN button at the desired point.
The VIDEO IN button will light and the IN point will be entered.
Press the VIDEO OUT button at the desired point.
The VIDEO OUT button will light and the OUT point will be entered.
(When in PLAY mode)
(When in another mode)
Press the PLAY button.
The PLAY button will light and "REPEAT" will appear in block 6 of the display.
The tape returns to the preroll point and repeats playback from the IN point.
Press the STOP button to stop playback.
See notes on the following page.
(OUT point)

Notes

- You may also use the 21-key section to set the IN and OUT points *(see page 3-35).*
- If the VIDEO IN and VIDEO OUT buttons are not lit, the beginning and the end of the tape are regarded as the IN and OUT points for this mode.
- You can stop playback by pressing the STOP button (or by entering a different mode than PLAY mode). If you press the PLAY button again, playback will be re-started from the IN point.
- You can also stop prerolling, but in this case, "REPEAT" will disappear from the display. To re-start PROGRAM REPEAT playback, press the PLAY button twice.
- You cannot perform editing or recording in this mode.
- You cannot use this mode when the REMOTE/LOCAL switch is set to REMOTE.

Exiting PROGRAM REPEAT playback mode


Operation
Remarks
Press the STOP button.
The unit will enter STOP mode.
Press the SET UP key.
The SET UP indicator will flash.
Set menu item S15 PROGRAM REPEAT to DISABLE. See page 1-64.
The unit will exit PROGRAM REPEAT playback mode.
Press the AUTO/OUT key.
The AUTO indicator will go off.
Press the SET UP key.
The SET UP indicator will go off.
End

Notes

- To exit this mode only temporarily, turn the AUTO indicator off. You can re-enter the mode by turning the AUTO indicator on again, but it is necessary to set the IN and OUT points again to light the VIDEO IN and VIDEO OUT buttons.
- The IN and OUT points will be maintained even if the power is turned off. When the power is turned on again, the tape automatically returns to the preroll point and the unit will enter repeat playback mode automatically.

Notes on editing

The following table shows which channels you can select in each of the editing modes.

Editing mode / Channel or function	ASSEMBLE mode	INSERT mode	STOP ERASE mode
VIDEO channel	Yes	Yes	No
TC channel	Yes	Yes	No
CUE channel	Yes	Yes	Yes
DA-1 to DA-4	Yes	Yes	Yes*
Individual channel selection	No	Yes	Yes
AUDIO SPLIT editing	No	Yes	—

* Automatic editing only

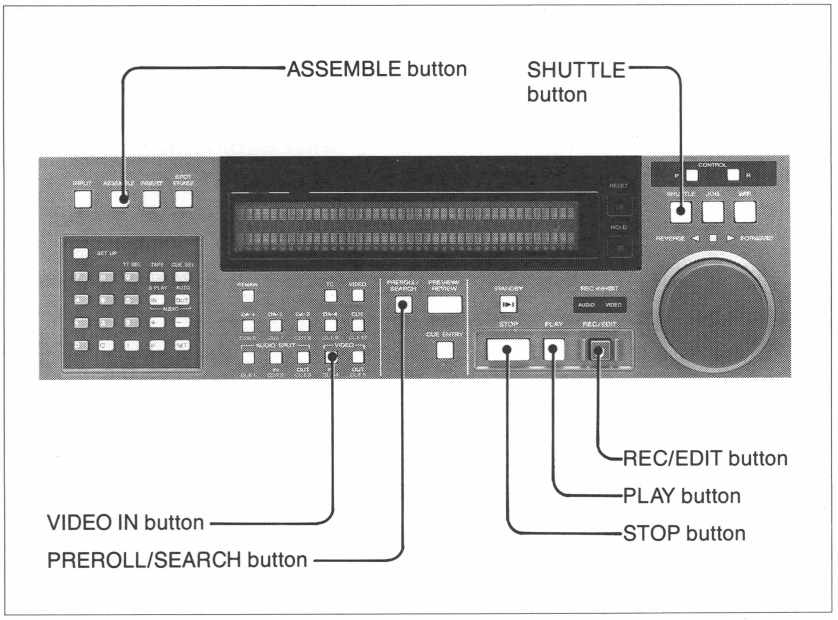
- In INSERT editing, the REC INHIBIT AUDIO/VIDEO switches on the level control panel determine whether the audio and video signals are recorded. In ASSEMBLE editing, if either switch is on, neither audio nor video recording is possible, and therefore both REC INHIBIT switches must be off.
- Select the fields for editing IN and OUT points from menu item S05 EDIT FIELD.
- During editing, even if all of the channel preset buttons are off, the REC/EDIT button stays lit, and the unit stays in editing mode. Pressing one of the channel preset buttons will immediately start recording on that channel.
- For video input, selecting video signals Y-P_B-P_R is recommended so that the input matrix may be by-passed to avoid picture deterioration.

3-4-1. Manual Editing

ASSEMBLE editing

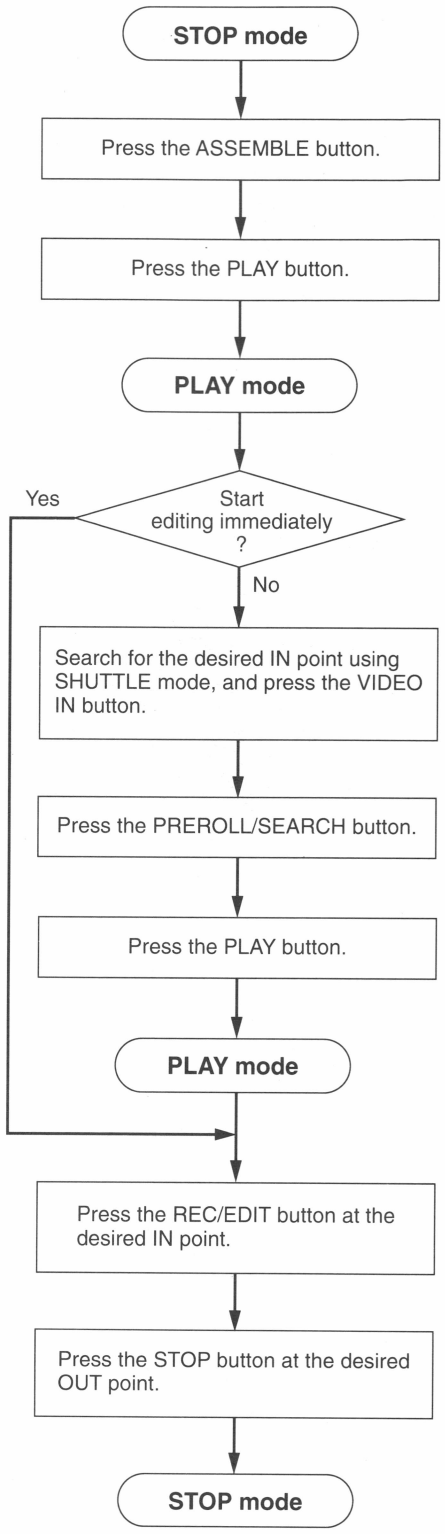
Notes on ASSEMBLE editing

- The audio, video, CTL and time code signals are recorded simultaneously.
- Check that both of the REC INHIBIT AUDIO and REC INHIBIT VIDEO switches are off.
- Check that the cassette record-inhibit key is set to the record-enable position.
- The channel preset buttons do not function. (In ASSEMBLE mode, they are always lit.)
- In ASSEMBLE editing, the audio, video and CTL signals past the OUT point are not recorded correctly. Therefore, even if this portion is played back, the servo will not lock, and correct video and audio signals will not be obtained.



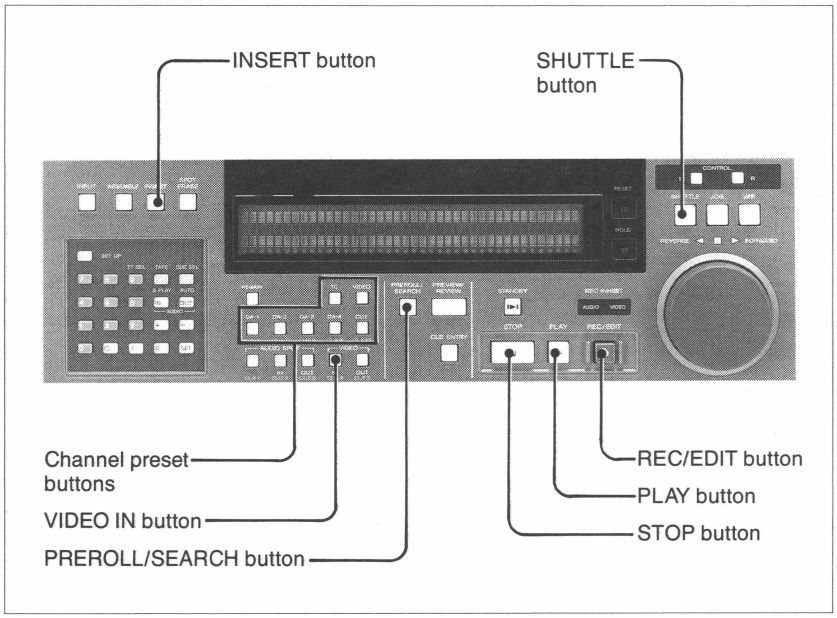
Buttons used for ASSEMBLE editing

Operating sequence


Operation
Remarks
STOP mode
Press the ASSEMBLE button.
The ASSEMBLE button and all channel preset buttons will light.
Press the PLAY button.
PLAY mode
Yes
Start editing immediately ?
No
Search for the desired IN point using SHUTTLE mode, and press the VIDEO IN button.
Press the PREROLL/SEARCH button.
The tape will run to the preroll point, and will stop.
Press the PLAY button.
PLAY mode
Press the REC/EDIT button at the desired IN point.
Editing will start.
Press the STOP button at the desired OUT point.
Editing will stop.
STOP mode

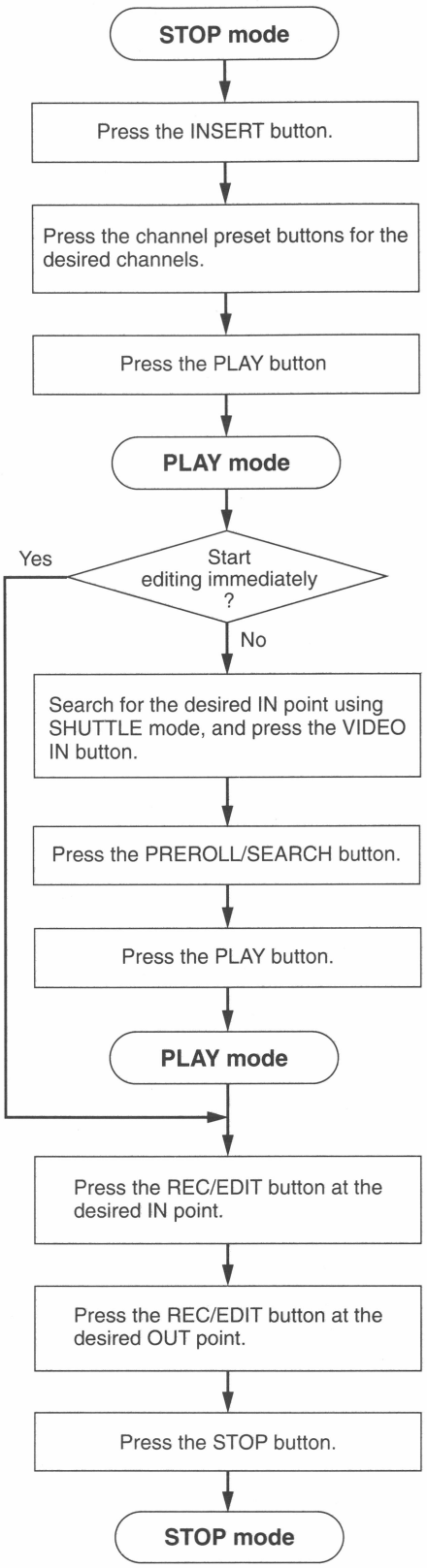
Notes on INSERT editing

- Check that the REC INHIBIT AUDIO/VIDEO switches are set to OFF for the channels for which you want to perform INSERT editing.
- Check that the cassette record-inhibit key is set to the record-enable position.
- A pre-recorded CTL signal is used as a reference signal. There is therefore no image deterioration at the editing IN and OUT points.
- During INSERT editing, you can switch any of the channels on and off.



Buttons used for INSERT editing

Operating sequence

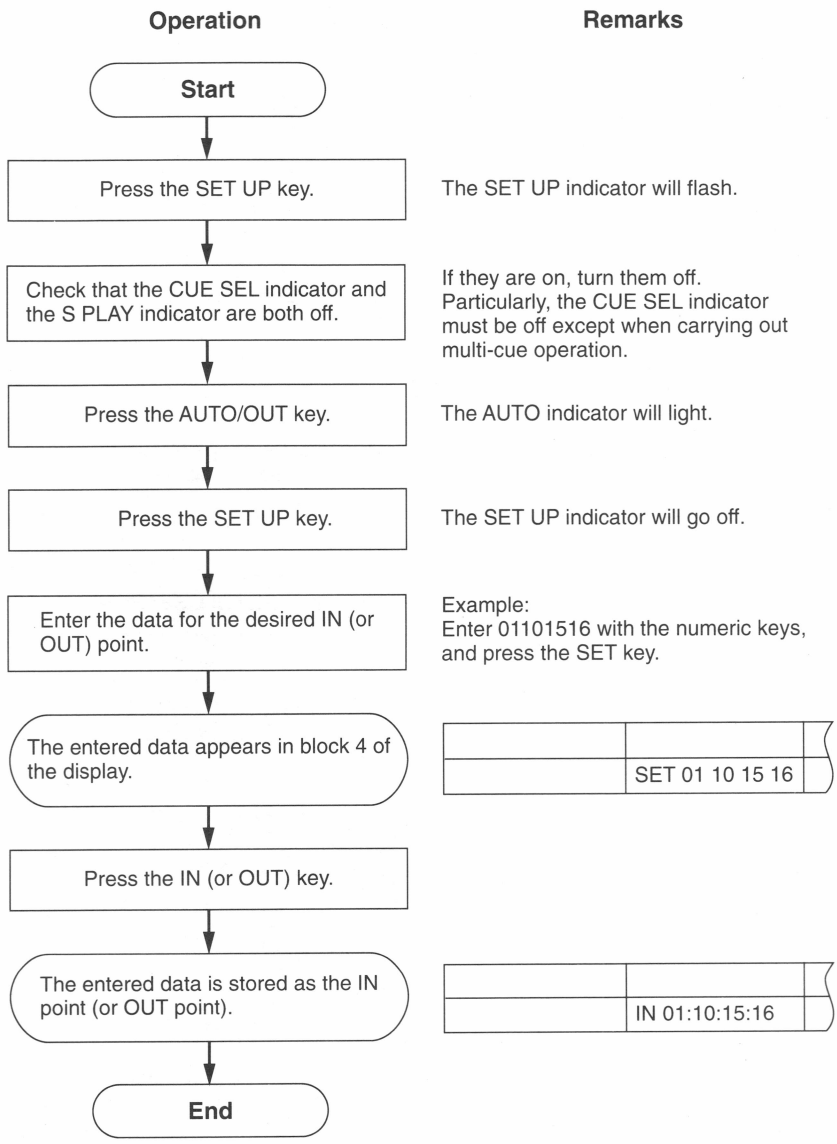

Operation
Remarks
STOP mode
Press the INSERT button.
Press the channel preset buttons for the desired channels.
The channel preset buttons pressed will light.
Press the PLAY button
PLAY mode
Yes
Start editing immediately ?
No
Search for the desired IN point using SHUTTLE mode, and press the VIDEO IN button.
Press the PREROLL/SEARCH button.
The tape will run to the preroll point, and will stop.
Press the PLAY button.
PLAY mode
Press the REC/EDIT button at the desired IN point.
Editing will start.
Press the REC/EDIT button at the desired OUT point.
Editing will stop.
Press the STOP button.
STOP mode

3-4-2. Automatic Editing

Setting and displaying IN and OUT points with the 21-key section

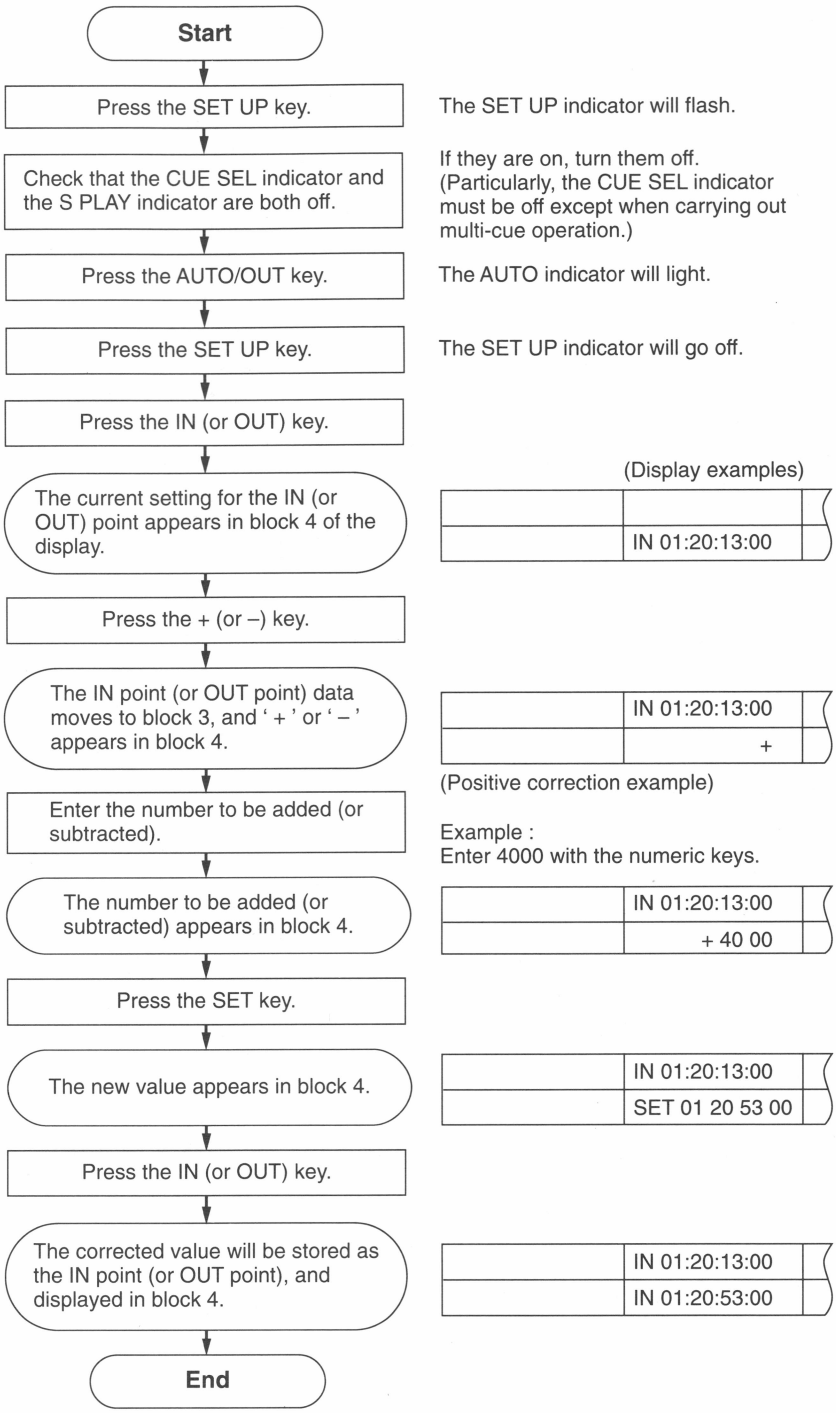
Setting the IN and OUT points

In addition to setting IN and OUT points by pressing the VIDEO IN/OUT and AUDIO SPLIT IN/OUT buttons at the desired points, the 21-key section can also be used, as follows:


Operation
Remarks
Start
Press the SET UP key.
The SET UP indicator will flash.
Check that the CUE SEL indicator and the S PLAY indicator are both off.
If they are on, turn them off. Particularly, the CUE SEL indicator must be off except when carrying out multi-cue operation.
Press the AUTO/OUT key.
The AUTO indicator will light.
Press the SET UP key.
The SET UP indicator will go off.
Enter the data for the desired IN (or OUT) point.
Example:
Enter 01101516 with the numeric keys, and press the SET key.
The entered data appears in block 4 of the display.
SET 01 10 15 16
Press the IN (or OUT) key.
The entered data is stored as the IN point (or OUT point).
IN 01:10:15:16
End

Setting audio IN or OUT points
Do this in the same way, but pressing the AUDIO IN or AUDIO OUT key in place of the IN or OUT key.

Recalling and modifying IN and OUT points

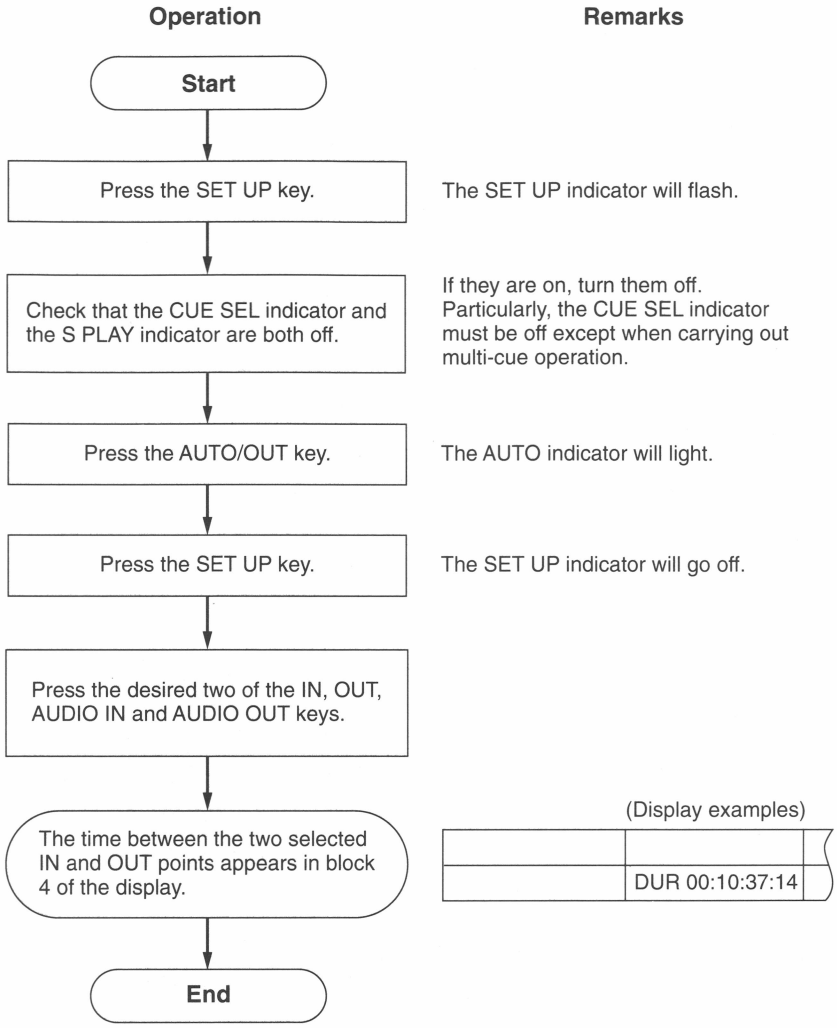

Operation
Remarks
Start
Press the SET UP key.
The SET UP indicator will flash.
Check that the CUE SEL indicator and the S PLAY indicator are both off.
If they are on, turn them off. (Particularly, the CUE SEL indicator must be off except when carrying out multi-cue operation.)
Press the AUTO/OUT key.
The AUTO indicator will light.
Press the SET UP key.
The SET UP indicator will go off.
Press the IN (or OUT) key.
(Display examples)
IN 01:20:13:00
The current setting for the IN (or OUT) point appears in block 4 of the display.
Press the + (or –) key.
The IN point (or OUT point) data moves to block 3, and ' + ' or ' – ' appears in block 4.
IN 01:20:13:00
+
(Positive correction example)
Enter the number to be added (or subtracted).
Example :
Enter 4000 with the numeric keys.
The number to be added (or subtracted) appears in block 4.
IN 01:20:13:00
+ 40 00
Press the SET key.
The new value appears in block 4.
IN 01:20:13:00
SET 01 20 53 00
Press the IN (or OUT) key.
The corrected value will be stored as the IN point (or OUT point), and displayed in block 4.
IN 01:20:13:00
IN 01:20:53:00
End

Recalling and modifying audio IN and OUT points
Do this in the same way, but pressing the AUDIO IN or AUDIO OUT key in place of the IN or OUT key.

Flashing "NEGATIVE" message
If the new IN or OUT point value means that the IN value is greater than the OUT value, the error message "NEGATIVE" will flash in block 6. Re-enter the correct value or values.

Editing interval display

The following procedure will show the time between any two of the IN, OUT, audio IN and audio OUT points.


Operation
Remarks
Start
Press the SET UP key.
The SET UP indicator will flash.
Check that the CUE SEL indicator and the S PLAY indicator are both off.
If they are on, turn them off. Particularly, the CUE SEL indicator must be off except when carrying out multi-cue operation.
Press the AUTO/OUT key.
The AUTO indicator will light.
Press the SET UP key.
The SET UP indicator will go off.
Press the desired two of the IN, OUT, AUDIO IN and AUDIO OUT keys.
(Display examples)
The time between the two selected IN and OUT points appears in block 4 of the display.
DUR 00:10:37:14
End

The display will indicate 'DUR' when the interval is determined by timer 1 or time code, and 'LAP' when it is determined by timer 2.

Preview

Once both editing IN and OUT points are set, and one of the ASSEMBLE, INSERT or SPOT ERASE buttons is lit, you can start a preview by pressing the PREVIEW/REVIEW button.

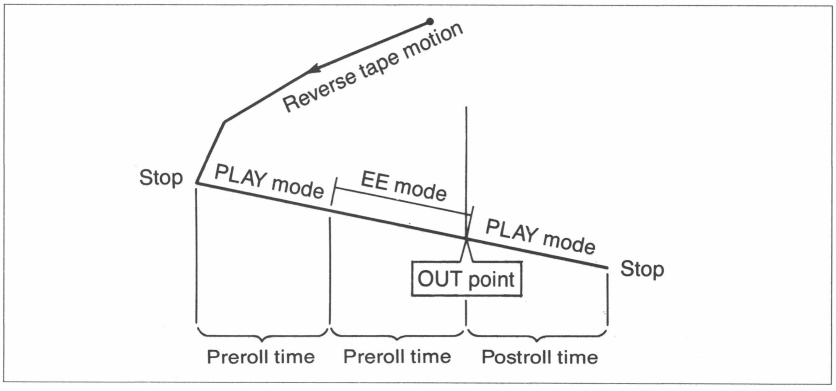
For details of the tape motion during preview, see pages 3-53 and 3-54.

Previewing on both recorder (this unit) and player (other high-definition VTR)
Press the CONTROL R button on the recorder, turning it on, and then press the PREVIEW/REVIEW button. The recorder and player will both operate, and you can check the rehearsal of both audio and video in the editing interval on the recorder monitor.

Previewing with the player only
Press the CONTROL P button on the recorder, turning it on, and then press the PREVIEW/REVIEW button. This will carry out a preview on the player only.

Previewing with the recorder only
With both CONTROL P/R buttons off on the recorder, press the PREVIEW/REVIEW button to carry out a preview on the recorder only.

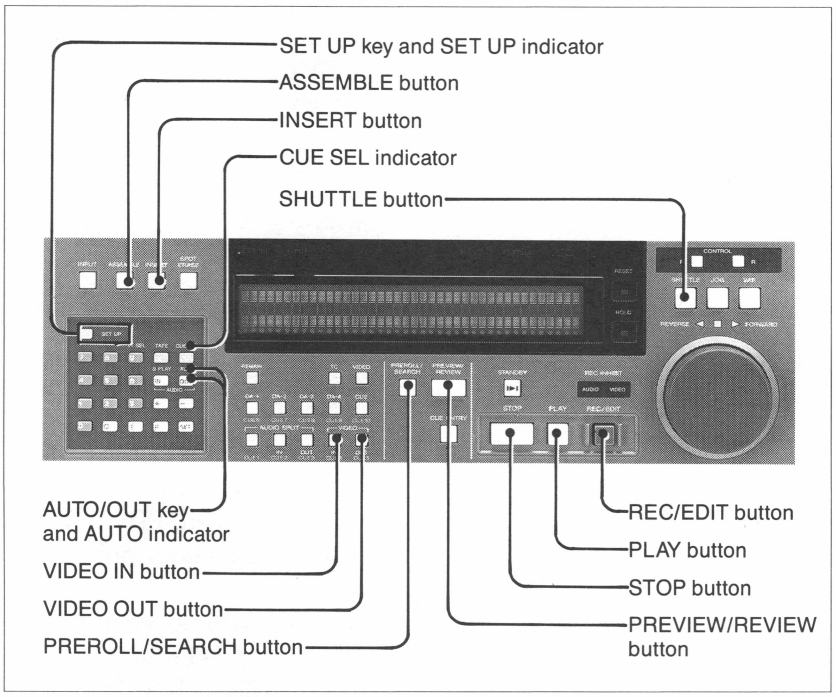
Previewing the OUT point (INSERT mode only)
Select either or both of the recorder and player as described above, then with the OUT key in the 21-key section held down, press the PREVIEW/REVIEW button. As shown in the following diagram, the vicinity of the OUT point only will be previewed.



Tape motion for previewing the OUT point vicinity in INSERT mode

Setting the preroll and postroll times
Carry out these settings with menu items I15 EDIT PREROLL TIME and I16 EDIT POSTROLL TIME respectively.

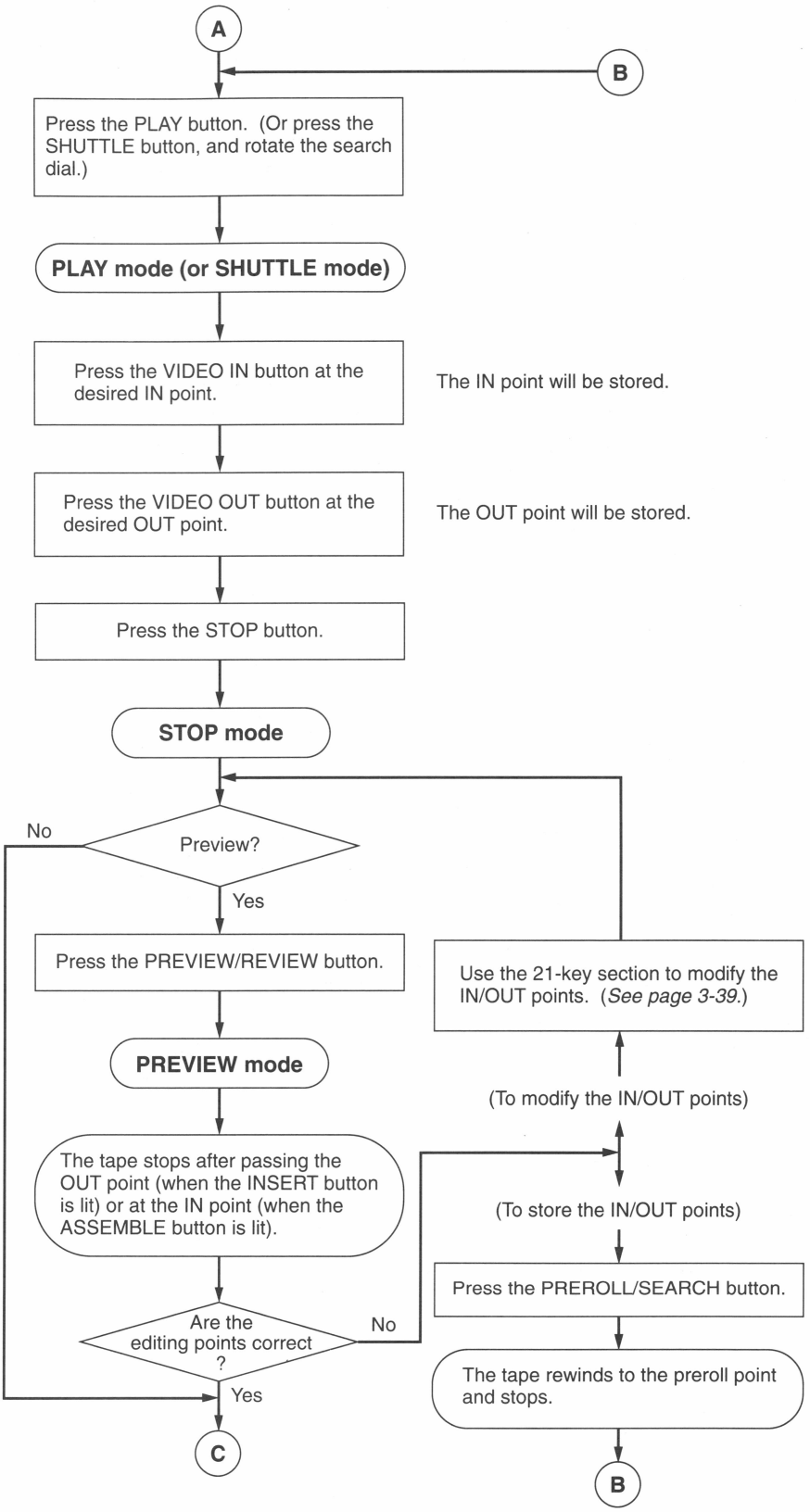
Basic operations for automatic editing

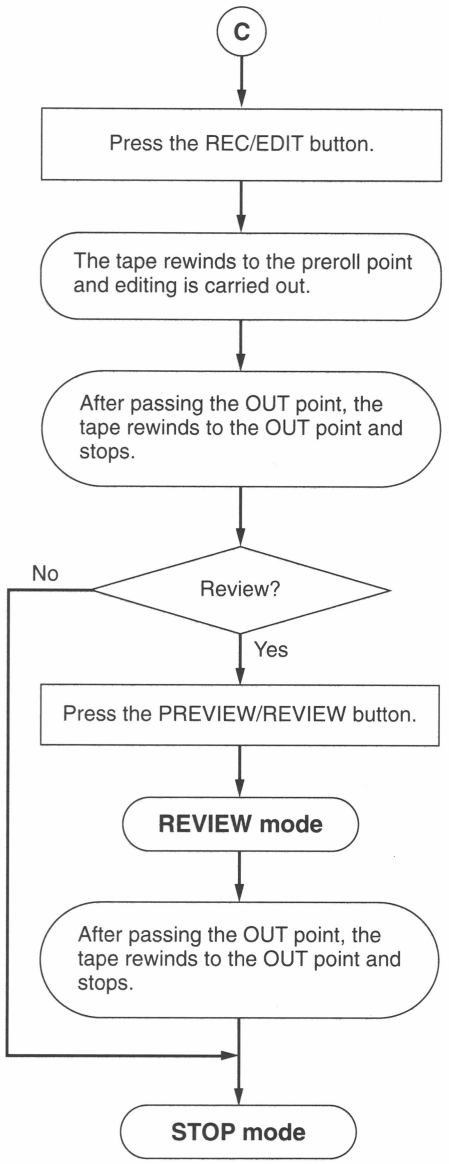


Controls used for automatic editing

Operating sequence

Operation	Remarks
STOP mode	
Press the SET UP key.	The SET UP indicator will flash.
Check that the CUE SEL indicator and the S PLAY indicator are both off.	If they are on, turn them off. (Particularly, the CUE SEL indicator must be off except when carrying out multi-cue operation.)
Press the AUTO/OUT key.	The AUTO indicator will light.
Press the SET UP key.	The SET UP indicator will go off.
Press the ASSEMBLE button or the INSERT button.	
If you pressed the INSERT button, select the desired channels with the channel prest buttons.	
A	


A
B
Press the PLAY button. (Or press the SHUTTLE button, and rotate the search dial.)
PLAY mode (or SHUTTLE mode)
Press the VIDEO IN button at the desired IN point.
The IN point will be stored.
Press the VIDEO OUT button at the desired OUT point.
The OUT point will be stored.
Press the STOP button.
STOP mode
No
Preview?
Yes
Press the PREVIEW/REVIEW button.
PREVIEW mode
The tape stops after passing the OUT point (when the INSERT button is lit) or at the IN point (when the ASSEMBLE button is lit).
Are the editing points correct ?
No
Yes
C
Use the 21-key section to modify the IN/OUT points. (See page 3-39.)
(To modify the IN/OUT points)
(To store the IN/OUT points)
Press the PREROLL/SEARCH button.
The tape rewinds to the preroll point and stops.
B


C
Press the REC/EDIT button.
The tape rewinds to the preroll point and editing is carried out.
After passing the OUT point, the tape rewinds to the OUT point and stops.
No
Review?
Yes
Press the PREVIEW/REVIEW button.
REVIEW mode
After passing the OUT point, the tape rewinds to the OUT point and stops.
STOP mode

Mode display during automatic editing

When menu item I06 AUTO MODE INSTRUCT is set to ENABLE, at each stage during automatic editing, the buttons flash to guide the user to the next operation, as shown in the following table. Select the required button from those that are flashing.

Step	Button		VIDEO IN	VIDEO OUT	AUDIO SPLIT IN	AUDIO SPLIT OUT	PREVIEW/ REVIEW	REC/ EDIT	Notes
1	When the AUTO indicator is off		Off	Off	Off	Off	Off	Off	
2	AUTO mode on	When the AUTO indicator is turned on	Flashing	Flashing*2	Off	Off	Off	Off	
3		When the AUTO SPLIT mode is selected	Flashing	Flashing	Flashing	Flashing	Off	Off	
4		When the IN point only is set	On	Flashing*2	Off (Flashing)*1	Off (Flashing)*1	Flashing	Off	When all of the channel preset buttons are off
								Flashing*3	When at least one of the channel preset buttons is on
5		When the OUT point only is set	Flashing	On	Off (Flashing)*1	Off (Flashing)*1	Off	Off	
6		When the IN and OUT points are both set	On	On	—	—	Flashing	Off	
								Flashing*3	
7		When the PREROLL/ SEARCH button is pressed	On	—	—	—	Off	Off	
8		When the PREVIEW/ REVIEW button is pressed (PREVIEW mode)	On	—	—	—	On	Off	
9		When the REC/EDIT button is pressed	On	—	—	—	Off	On	
10		When editing is finished	Off	Off	Off	Off	Flashing	Off	
11		When the PREVIEW/ REVIEW button is pressed (REVIEW mode)	Off	Off	Off	Off	On	Off	After review mode, returns to step 2

*1 Indications in parentheses are for AUDIO SPLIT mode.

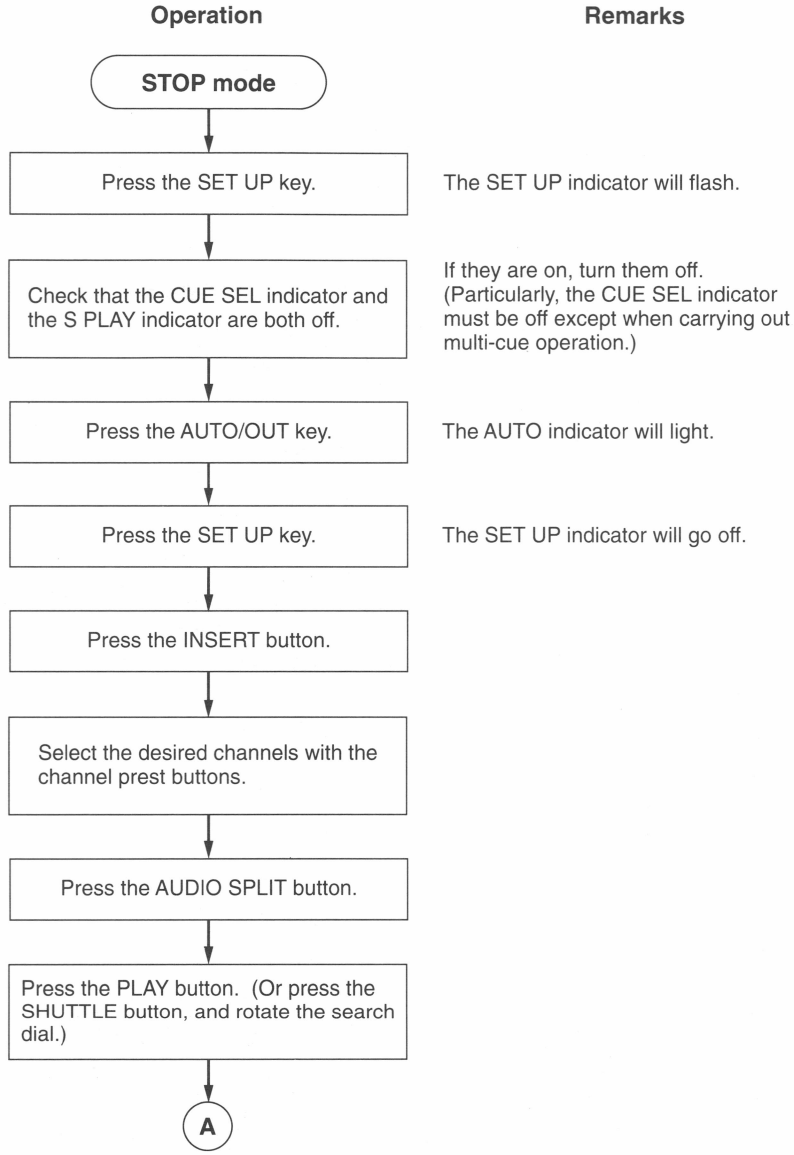
*2 Does not light in ASSEMBLE mode.

*3 Does not flash if the REC INHIBIT indicator is on.

AUDIO SPLIT editing

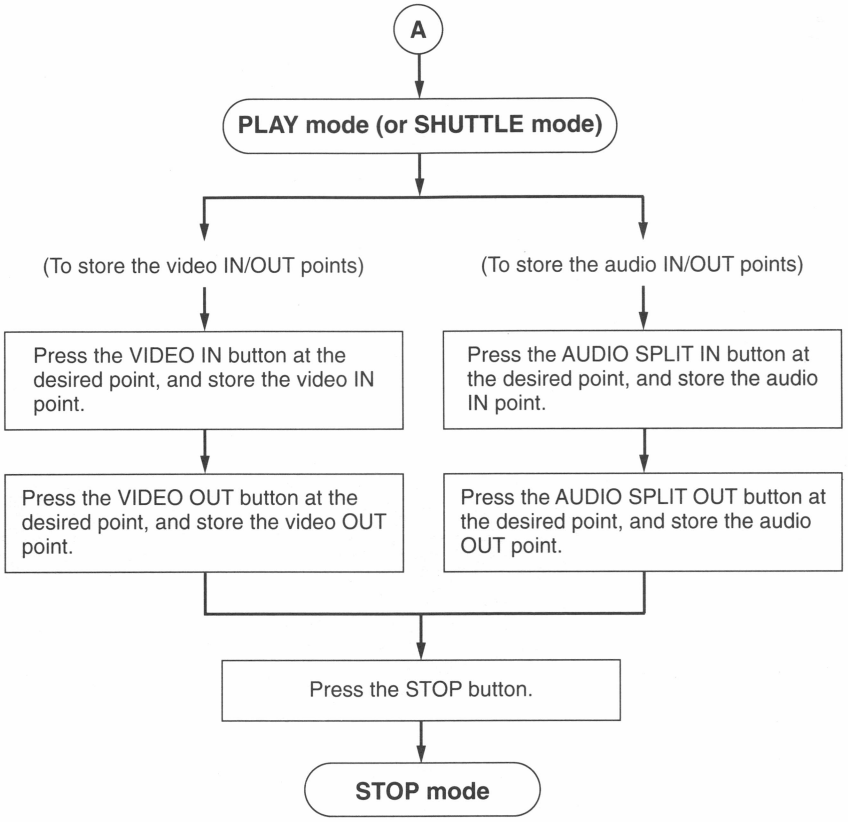
In AUDIO SPLIT mode, the audio and video IN and OUT points are independent, and are stored separately. Other operations are the same as in the basic operations for automatic editing described on pages 3-42 to 3-44. AUDIO SPLIT editing is only possible in INSERT mode.

Operating sequence


Operation
Remarks
STOP mode
Press the SET UP key.
The SET UP indicator will flash.
Check that the CUE SEL indicator and the S PLAY indicator are both off.
If they are on, turn them off. (Particularly, the CUE SEL indicator must be off except when carrying out multi-cue operation.)
Press the AUTO/OUT key.
The AUTO indicator will light.
Press the SET UP key.
The SET UP indicator will go off.
Press the INSERT button.
Select the desired channels with the channel prest buttons.
Press the AUDIO SPLIT button.
Press the PLAY button. (Or press the SHUTTLE button, and rotate the search dial.)
A

Preview and review operations
These are the same as in the basic operations for automatic editing.

Modifying the edit points after previewing
This is the same as in the basic operations for automatic editing. Modify the video IN and OUT points using the IN/OUT keys in the 21-key section. Next modify the audio IN and OUT points using the AUDIO IN/OUT keys *(see page 3-39)*. The IN and OUT points can be modified and stored again after preroll.

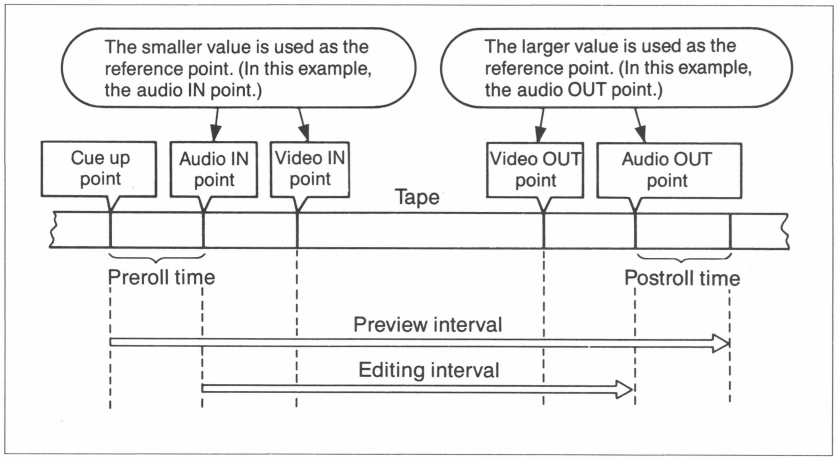

A
PLAY mode (or SHUTTLE mode)
(To store the video IN/OUT points)
(To store the audio IN/OUT points)
Press the VIDEO IN button at the desired point, and store the video IN point.
Press the AUDIO SPLIT IN button at the desired point, and store the audio IN point.
Press the VIDEO OUT button at the desired point, and store the video OUT point.
Press the AUDIO SPLIT OUT button at the desired point, and store the audio OUT point.
Press the STOP button.
STOP mode

Note

After finishing AUDIO SPLIT editing, press the AUDIO SPLIT button so that it goes off.

Editing intervals in AUDIO SPLIT mode

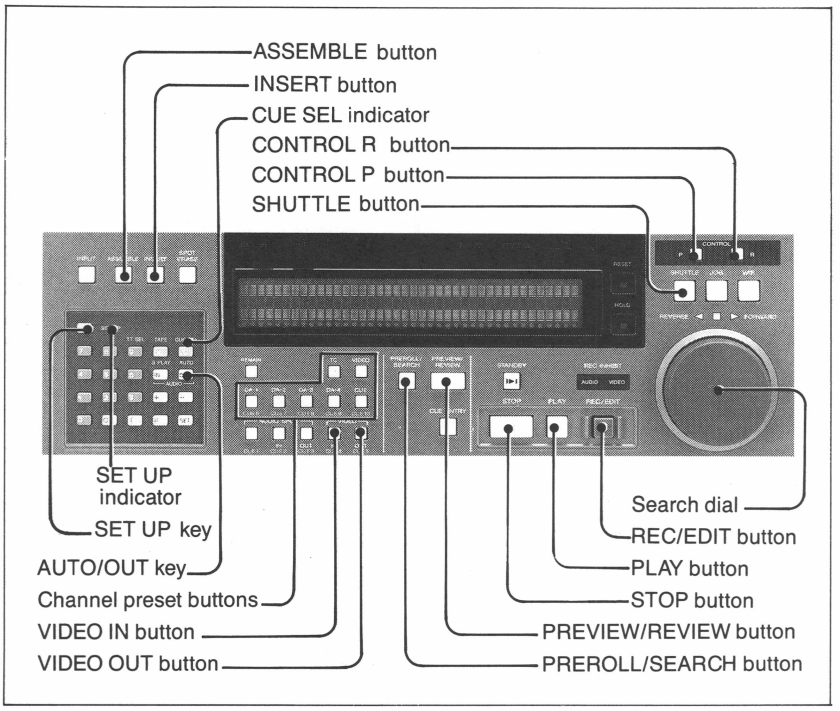
In AUDIO SPLIT editing, the audio and video edit points are stored at different points on the tape. In this case, the points used as the basis for editing are determined automatically as follows.


The smaller value is used as the reference point. (In this example, the audio IN point.)
The larger value is used as the reference point. (In this example, the audio OUT point.)
Cue up point
Audio IN point
Video IN point
Video OUT point
Audio OUT point
Tape
Preroll time
Postroll time
Preview interval
Editing interval

Editing intervals in AUDIO SPLIT mode

Two-unit editing

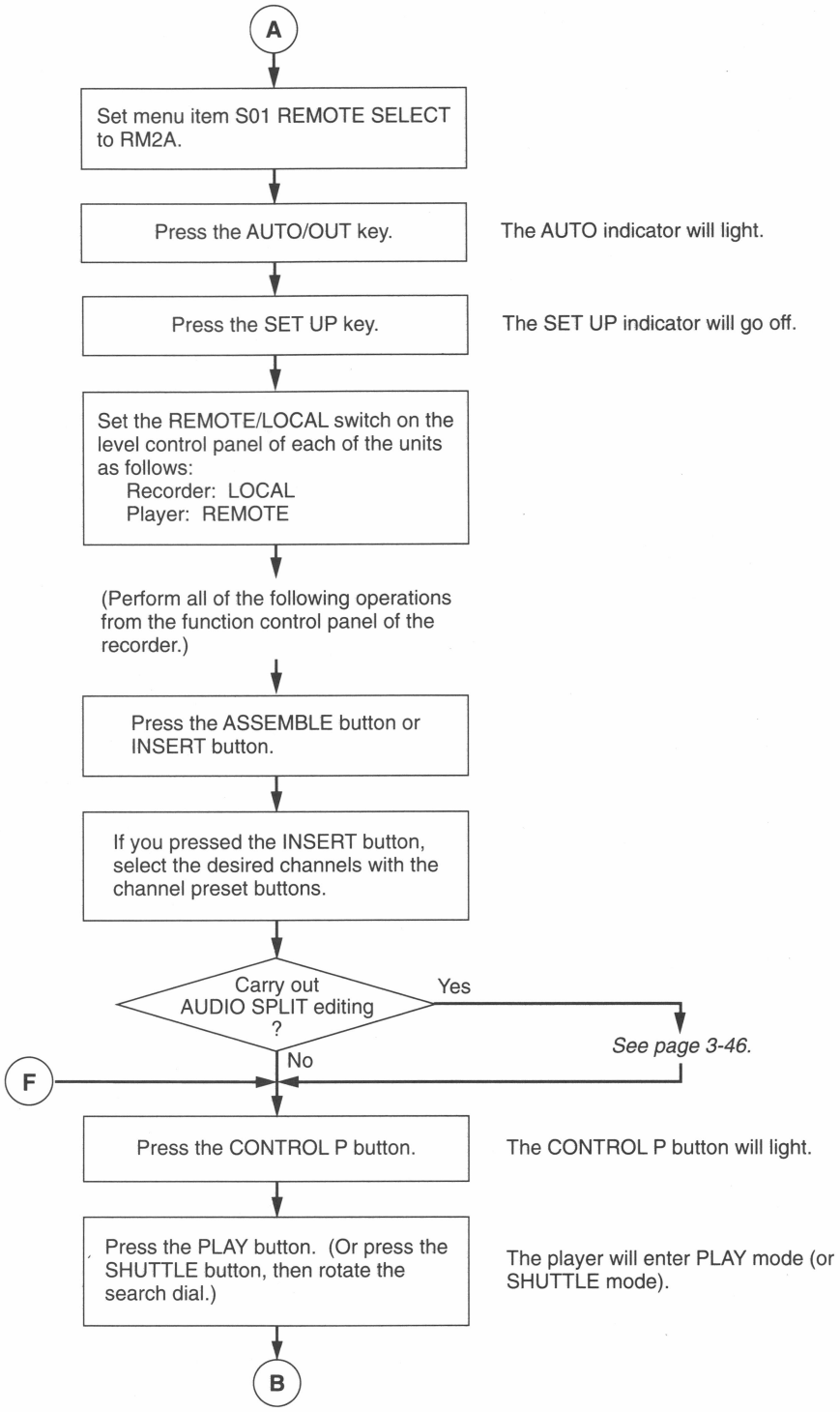
Connect the REMOTE-2A OUT connector on this unit, which will be used as the recorder, to the REMOTE-2A IN connector on the VTR which is to be the player, and perform the following operating procedure.



Controls used for two-unit editing

Operating sequence

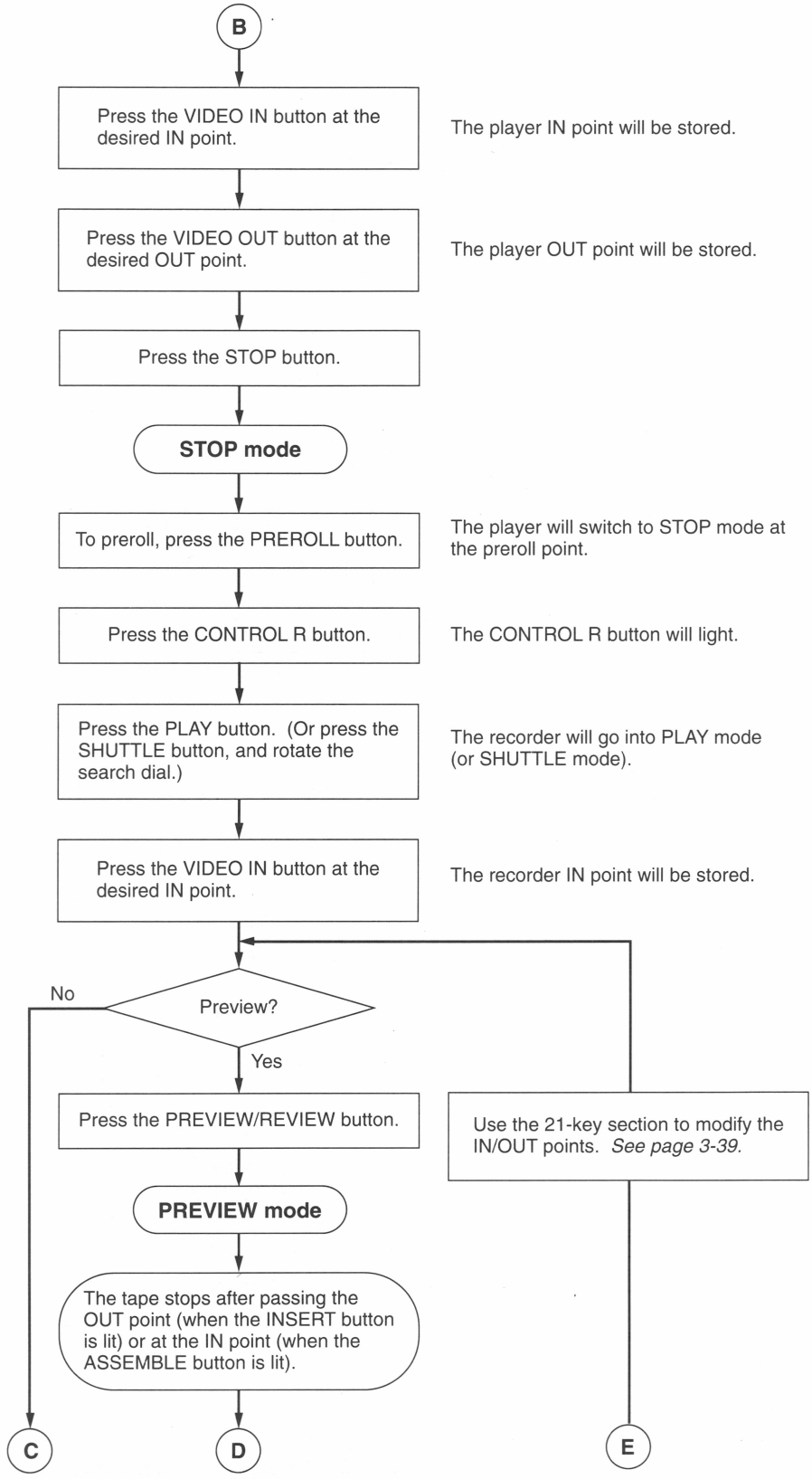
Operation	Remarks
STOP mode	
Set the REMOTE/LOCAL switch on the level control panel to LOCAL.	
Press the SET UP key.	The SET UP indicator will flash.
Check that the CUE SEL indicator and the S PLAY indicator are both off.	If they are on, turn them off. (Particularly, the CUE SEL indicator must be off except when carrying out multi-cue operation.)
(A)	

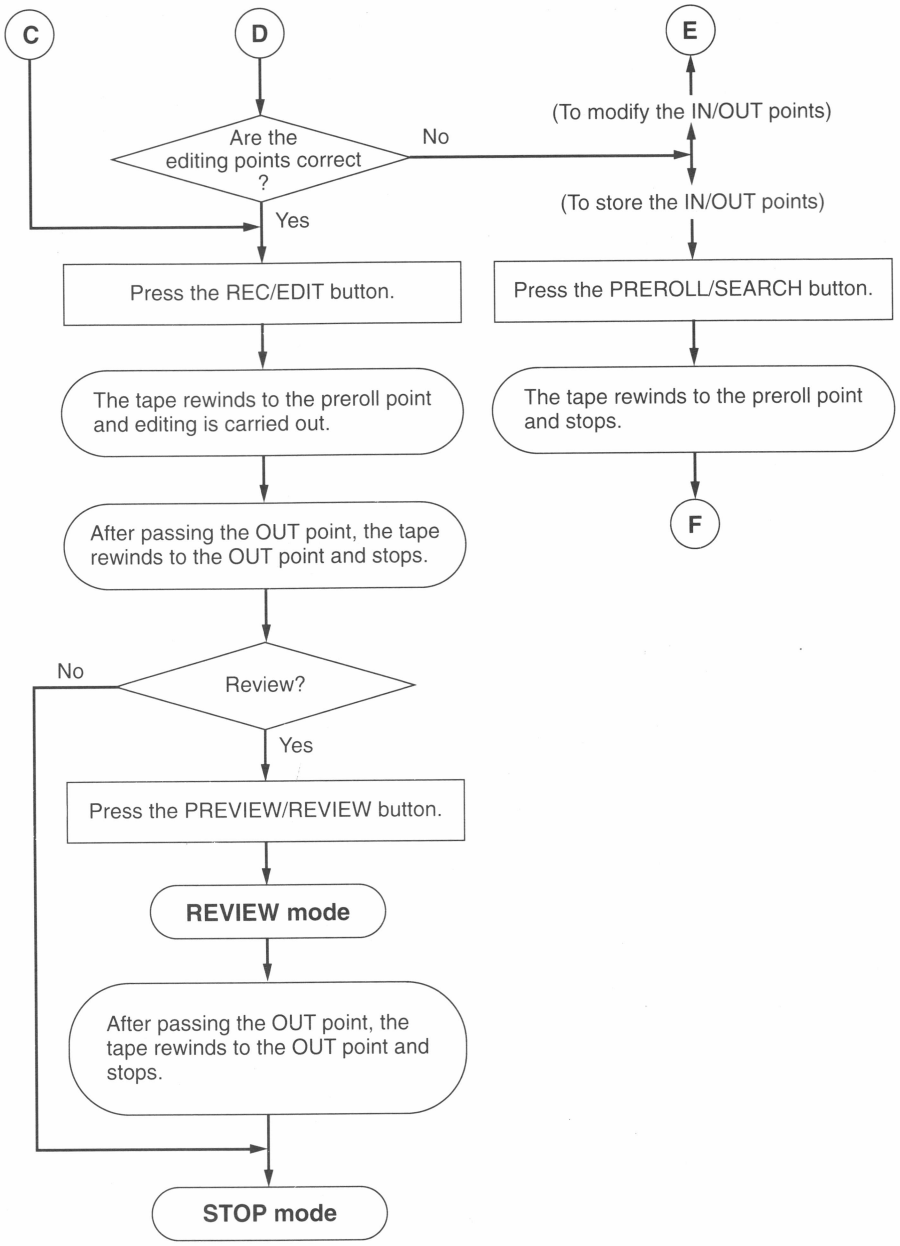

A
Set menu item S01 REMOTE SELECT to RM2A.
Press the AUTO/OUT key.
The AUTO indicator will light.
Press the SET UP key.
The SET UP indicator will go off.
Set the REMOTE/LOCAL switch on the level control panel of each of the units as follows:
Recorder: LOCAL
Player: REMOTE
(Perform all of the following operations from the function control panel of the recorder.)
Press the ASSEMBLE button or INSERT button.
If you pressed the INSERT button, select the desired channels with the channel preset buttons.
Carry out AUDIO SPLIT editing ?
Yes
See page 3-46.
No
F
Press the CONTROL P button.
The CONTROL P button will light.
Press the PLAY button. (Or press the SHUTTLE button, then rotate the search dial.)
The player will enter PLAY mode (or SHUTTLE mode).
B

AUDIO SPLIT editing

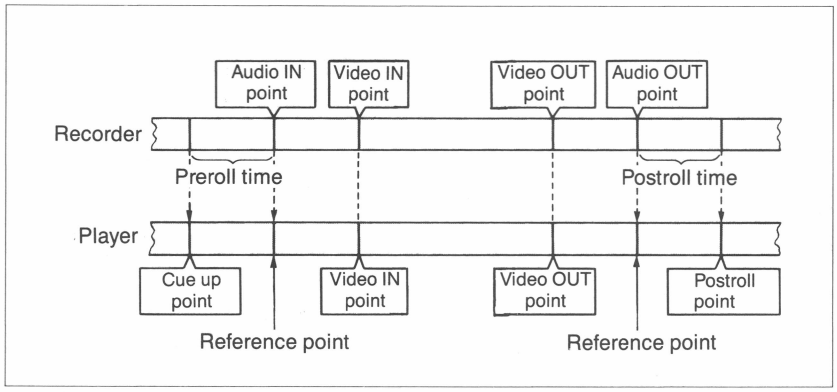
This is only possible in INSERT mode.

When carrying out two-unit editing in AUDIO SPLIT mode, the audio and video IN and OUT points are stored in the recorder unit.


B
Press the VIDEO IN button at the desired IN point.
The player IN point will be stored.
Press the VIDEO OUT button at the desired OUT point.
The player OUT point will be stored.
Press the STOP button.
STOP mode
To preroll, press the PREROLL button.
The player will switch to STOP mode at the preroll point.
Press the CONTROL R button.
The CONTROL R button will light.
Press the PLAY button. (Or press the SHUTTLE button, and rotate the search dial.)
The recorder will go into PLAY mode (or SHUTTLE mode).
Press the VIDEO IN button at the desired IN point.
The recorder IN point will be stored.
No
Preview?
Yes
Press the PREVIEW/REVIEW button.
Use the 21-key section to modify the IN/OUT points. See page 3-39.
PREVIEW mode
The tape stops after passing the OUT point (when the INSERT button is lit) or at the IN point (when the ASSEMBLE button is lit).
C
D
E


C
D
E
Are the editing points correct ?
No
(To modify the IN/OUT points)
Yes
(To store the IN/OUT points)
Press the REC/EDIT button.
Press the PREROLL/SEARCH button.
The tape rewinds to the preroll point and editing is carried out.
The tape rewinds to the preroll point and stops.
After passing the OUT point, the tape rewinds to the OUT point and stops.
F
No
Review?
Yes
Press the PREVIEW/REVIEW button.
REVIEW mode
After passing the OUT point, the tape rewinds to the OUT point and stops.
STOP mode

Editing intervals in AUDIO SPLIT mode (two-unit editing)
When carrying out two-unit editing in AUDIO SPLIT mode, the player editing points are stored as video IN/OUT points. In this case, the reference points for determining the player preroll and postroll points are determined from the recorder audio editing points as shown in the following diagram.

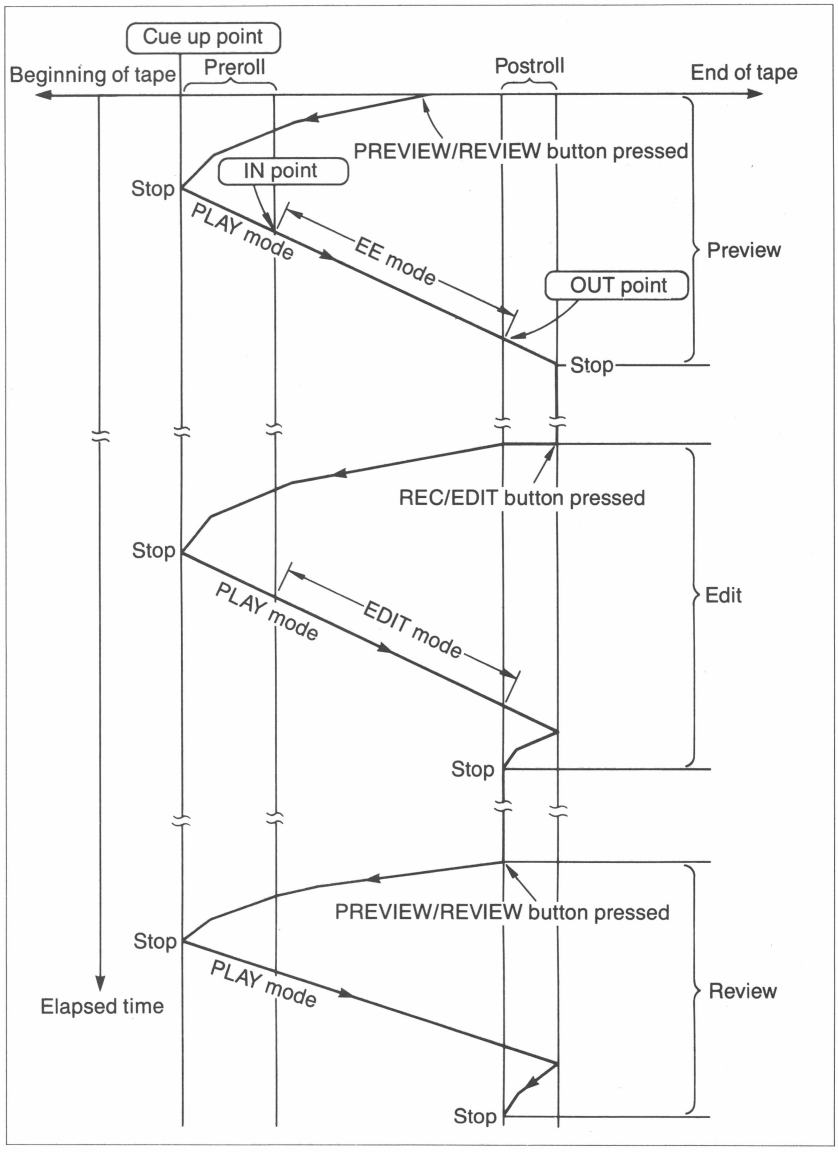


Editing intervals in AUDIO SPLIT mode (two-unit editing)

Tape motion during automatic editing

In automatic editing, the motion of the tape on the recording unit during the preview, edit and review operations are as shown in the following diagram.

INSERT editing

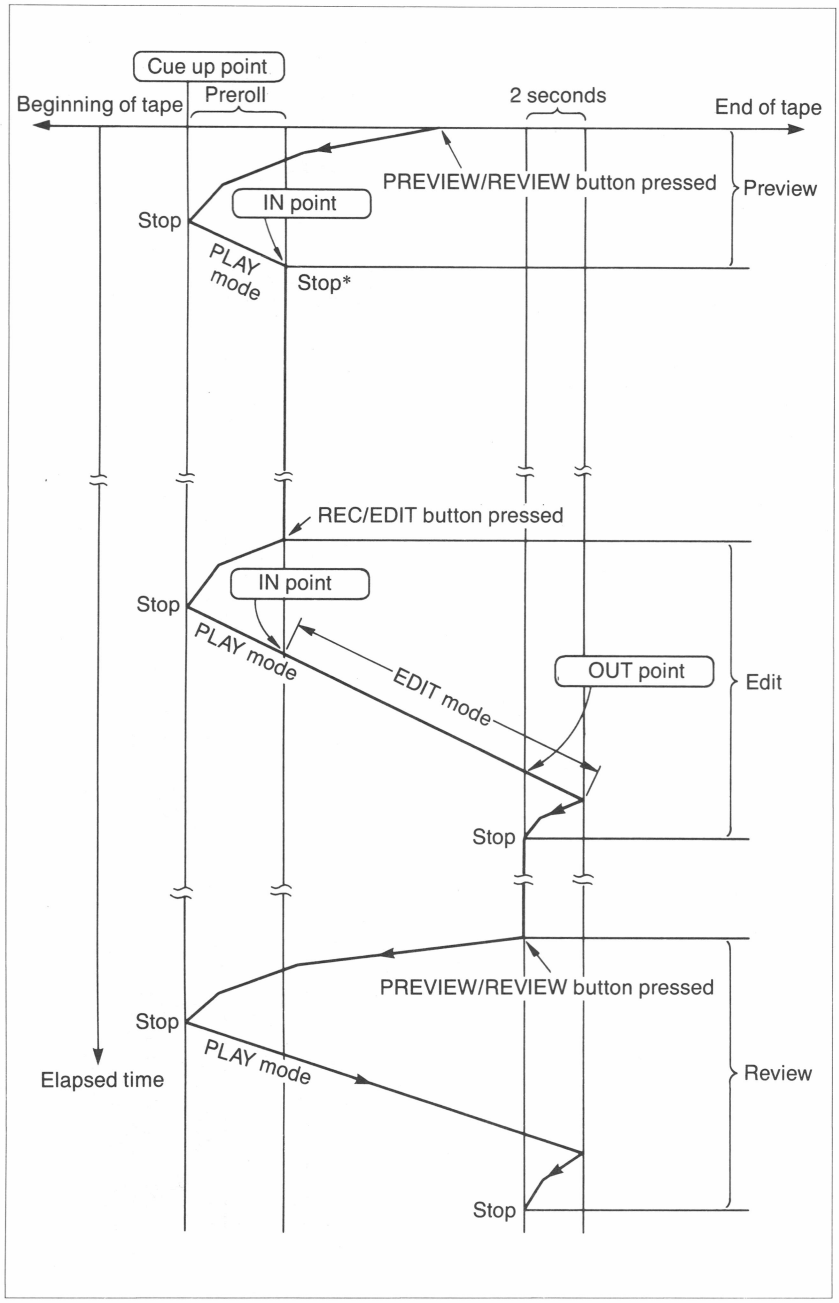


Tape motion during INSERT editing

Preroll time
The preroll time can be set in the range 0 to 30 seconds, using menu item I15 EDIT PREROLL TIME.

Postroll time
The postroll time can be set in the range 1 to 30 seconds, using menu item I16 EDIT POSTROLL TIME.

ASSEMBLE editing



Tape motion during ASSEMBLE editing

Preroll time
The preroll time can be set in the range 0 to 30 seconds, using menu item I15 EDIT PREROLL TIME.

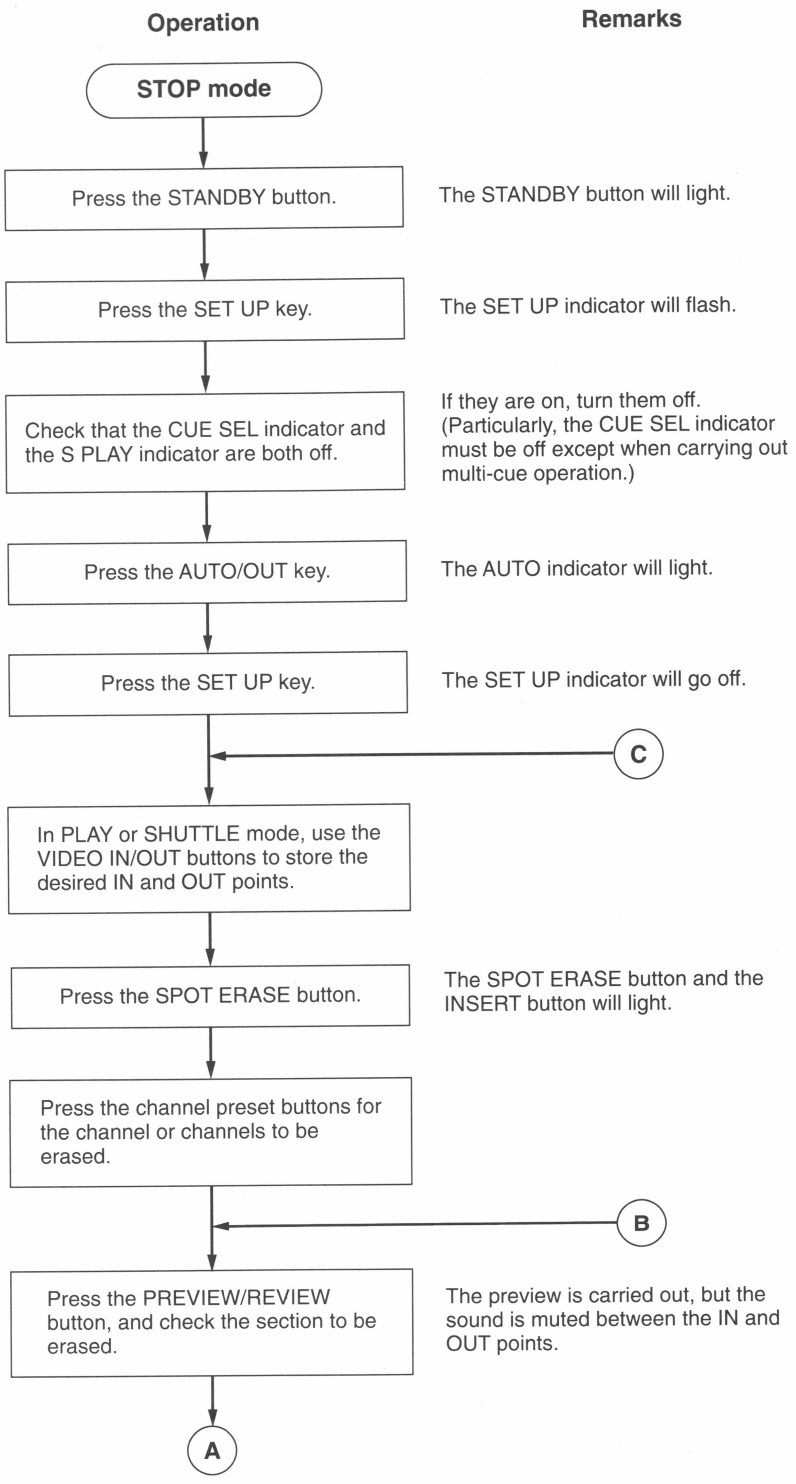
Postroll time
In ASSEMBLE editing mode, the postroll time is fixed, at approximately 2 seconds.

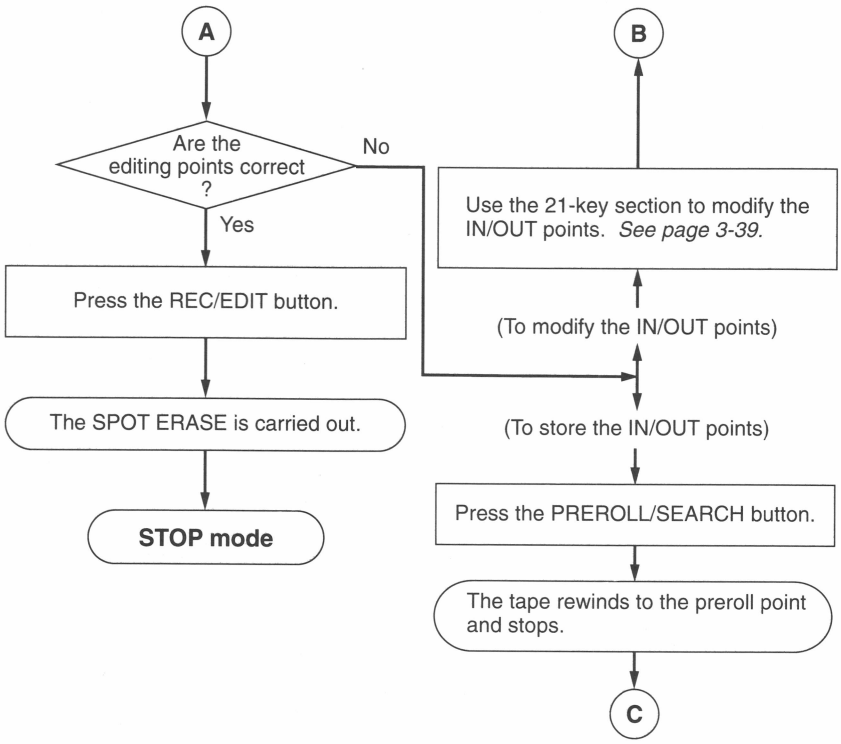
* On the player, the tape will advance for about 2 seconds beyond the OUT point, and then stop.

Automatic SPOT ERASE mode

In this mode, you can erase any desired audio signal between a pair of specified IN and OUT points.

Operating sequence


Operation
Remarks
STOP mode
Press the STANDBY button.
The STANDBY button will light.
Press the SET UP key.
The SET UP indicator will flash.
Check that the CUE SEL indicator and the S PLAY indicator are both off.
If they are on, turn them off. (Particularly, the CUE SEL indicator must be off except when carrying out multi-cue operation.)
Press the AUTO/OUT key.
The AUTO indicator will light.
Press the SET UP key.
The SET UP indicator will go off.
C
In PLAY or SHUTTLE mode, use the VIDEO IN/OUT buttons to store the desired IN and OUT points.
Press the SPOT ERASE button.
The SPOT ERASE button and the INSERT button will light.
Press the channel preset buttons for the channel or channels to be erased.
B
Press the PREVIEW/REVIEW button, and check the section to be erased.
The preview is carried out, but the sound is muted between the IN and OUT points.
A


A
Are the editing points correct ?
No
Yes
Press the REC/EDIT button.
The SPOT ERASE is carried out.
STOP mode
B
Use the 21-key section to modify the IN/OUT points. See page 3-39.
(To modify the IN/OUT points)
(To store the IN/OUT points)
Press the PREROLL/SEARCH button.
The tape rewinds to the preroll point and stops.
C

Output signals during the editing process

The output signals from the VIDEO OUT, VIDEO MONITOR OUT, ANALOG/DIGITAL AUDIO OUT and MONITOR L/R connectors are as shown in the following table. At the point marked with a cross in the table, the signal phase changes and the monitor picture may be degraded, but the editing will be carried out correctly.

Video signals

	TAPE indicator state	IN point ▼		OUT point ▼	
PREVIEW	On or off	TAPE		EE	TAPE
EDIT	On	TAPE		TAPE (confidence)*	TAPE
	Off	TAPE	X	EE	TAPE

* Outputs the playback signal immediately after editing.

Audio signals

	TAPE indicator state	IN point ▼		OUT point ▼	
PREVIEW, EDIT	On or off	TAPE		EE	TAPE

3-5. Remote Control

There are two basic methods of remote control. The unit may be connected to another unit by an appropriate rear panel connector, so that you can control the operation of this unit from the other unit. Alternatively, an RM-770 remote control unit may be used for simple remote control, using either the front panel REMOTE jack or a wireless connection.

Notes on remote control

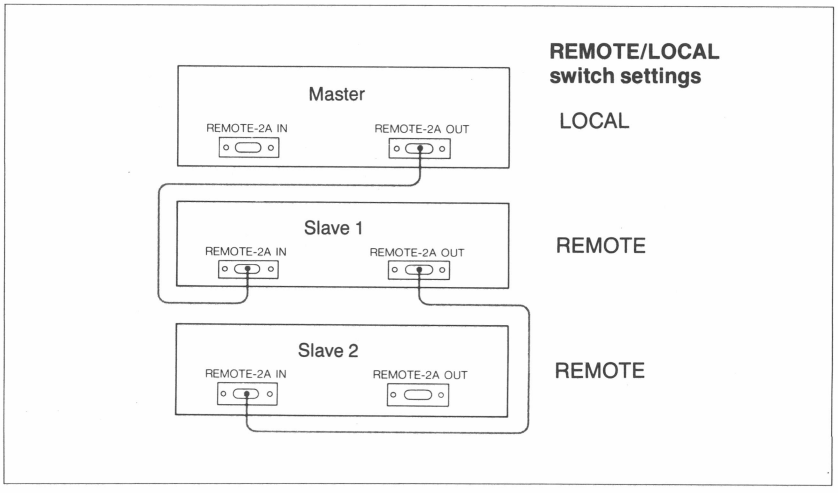
- *For details of which devices may be connected, see the description of the REMOTE connectors in Section 1-3-4 "Connector Panel" and Section 2-1 "Connection Examples."*
- When controlling this unit from another VTR or an editor, set the REMOTE/LOCAL switch to REMOTE. Use menu item I05 LOCAL KEY ENABLE to specify which of the buttons on the function control panel are enabled and which are disabled in this mode.
- When using any of the REMOTE-1 (RS-232C), REMOTE-2A IN, REMOTE-2A OUT, REMOTE-2B IN/OUT, or VA CONTROL connectors, make the corresponding selection in menu items S01 REMOTE SELECT and I28 VA REMOTE SELECT.

3-5-1. Parallel Operation

To operate two or more HDV-10 units simultaneously in the same mode:

- make the connections as shown in the diagram below,
- set menu item S08 PARA RUN to ENABLE on each unit, and
- set the REMOTE/LOCAL switch on each unit as shown below.

By simply operating the master unit, the other units will operate in the same mode.



Connections for parallel operation

3-5-2. Remote Control by RM-770 Remote Control Unit

The RM-770 remote control unit (supplied separately) is small and lightweight, and allows all basic operations of the HDV-10 unit to be carried out at the press of a button. When using a cable connection to the HDV-10 unit, this cable provides the power supply to the remote control unit; when used with a wireless connection, the remote control unit uses a battery power supply.

For further details, see the user documentation accompanying the RM-770 unit.

Operating Sequence

1 For a cable connection, use the cable supplied with the RM-770 unit to connect it to the REMOTE jack on the front panel of the HDV-10.

2 Set menu item S01 REMOTE SELECT to RM3.

3 Set the REMOTE/LOCAL switch on this unit to REMOTE. Depending on the setting of menu item I05 LOCAL KEY ENABLE, you can control this unit from either the remote control unit and the function control panel of this unit.

4 Use the following buttons on the RM-770 unit for simple remote control.

STOP button
Whichever mode the unit is operating in, the reel motor is stopped, then the pinch rollers are released from the tape, putting the unit in STOP mode. If this button is held down for at least 3 seconds when the unit is in STOP mode, the head drum stops rotating, and the unit enters STANDBY off mode.

PLAY button
The unit starts playback at normal forward speed.

REC (record) button
The unit starts recording. You can still use this button even if the HDV-10 unit function control panel is preset for editing.

FAST-FORWARD button
The unit winds the tape fast-forward, at 40 times normal speed.

REWIND button
The unit rewinds the tape at 40 times normal speed.

FORWARD SEARCH button
While this button is held down, the unit carries out a forward search at four times normal speed. If menu item S14 SEARCH is set to ENABLE, the video picture can be played back at the same time.

REVERSE SEARCH button
While this button is held down, the unit carries out a reverse search at four times normal speed. If menu item S14 SEARCH is set to ENABLE, the video picture can be played back at the same time.

PAUSE button
Pressing this button puts the unit into still mode. If menu item S14 SEARCH is set to ENABLE, the video picture can be played back at the same time. Once the specified time has elapsed after entering still mode, the unit switches into STOP mode.

SUPERIMPOSE button
When a picture monitor is connected to the VIDEO MONITOR OUT connectors of the HDV-10 unit, pressing this button will display a tape timer on the screen. The display switches on or off each time the button is pressed.

3-6. Alarm Functions

If any operating problem occurs in the unit, the relevant button or indicator will flash, and a buzzer will also sound. Various error messages also appear on the function control panel.

See Appendix A.

	STOP button*3	STANDBY button*3	SERVO indicator	SYSTEM indicator	Buzzer	HDV-10 state
VCR hard-ware fault	—	—	On	On	Sounds	Stops
Drum is not locked*1	—	—	On	Off	Off	Operation continues
Capstan is not locked	—	—	On	Off	Off	Operation continues
Tape is sticking	—	Flashes	Off	On	Sounds	Stops
No reference signal for servo	Flashes	—	Off	Off	Off	Operation continues
Fault in tape transport system*2	—	—	Off	On	Sounds	Stops

*1 If this state continues for eight seconds or more, the same alarm is given as for when the tape is sticking.

*2 When the operation stops because of a fault in the tape transport system, wait until the drum stops rotating. Next, turn off the POWER switch, or eject the cassette tape; the error state will terminate. (Pressing the STOP button will stop the buzzer from sounding.)

*3 Where a dash is shown in the table, the STOP and STANDBY buttons will be on or off, depending on the operating state.

APPENDICES

Appendix A. Error Messages A-1
Appendix B. Overlay Sheet for the 21-Key Section A-6
Index B-1

Appendix A. Error Messages

When an error is detected, the corresponding error message will flash in block 6 of the display and also on the monitor screen if error message superimposition is selected. The error messages that may appear are as follows:

Error message	Description
ABORT	When either of the following errors occurs, this message appears. At the same time, the unit switches from the current operation mode to STOP mode. To erase the message, press any function button*. • In AUTO EDIT or PREVIEW mode, when the tape has reached the point six frames before the video or audio IN point, synchronization has not been achieved or the servo has not been locked. • During two-unit operation in AUTO EDIT or PREVIEW mode, execution of a PREROLL command issued from this unit to the other ended without achieving cuing up.
AE08 BD	The AE-08 board is not inserted correctly, or the CPU bus interface is faulty.
ADA14 BD	The ADA-14 board is not inserted correctly, or the CPU bus interface is faulty.
CAP ERR	The frequency generator system or the drive system of the capstan motor is faulty.
CAS DRV	The cassette compartment motor drive system is faulty.
CAS SENS	Photosensor failure in the cassette compartment.
CAS TMO	The cassette up/down motion in the cassette compartment did not end within the designated time.
DATA ERR	Either of the following cases occurred. To erase the message, press any function button or the C key on the function control panel. • An invalid time code or timer value was entered from the 21-key section. • An undefined command was received from the remote controller connected to this unit.
DEC50 BD	The DEC-50 board is not inserted correctly, or the CPU bus interface is faulty.
DEW DET	The dew sensor in the drum section detected dew condensation. When this message appears, you cannot load a cassette in the unit. If a cassette is already loaded, the tape transport section of the unit becomes inoperable. Wait until the message disappears without turning the unit off.
DP105 BD	The DP-105 board is not inserted correctly behind the level control panel, or the flat cable to connect the DP-105 and the SW-352 board is not connected correctly.
DRUM ERR	The frequency generator system, drive system or reference system of the drum motor is faulty.
ED23 BD	The ED-23 board is not inserted correctly, or the CPU bus interface is faulty.

*Function buttons: REC/EDIT button, PLAY button, STANDBY button, STOP button, SHUTTLE button, JOG button and VAR button

Error message	Description
EMPH MIS	The emphasis setting indication given when the EMPHASIS button is pressed is inconsistent with the emphasis information contained in the tape playback signal.
ENC12 BD	The ENC-12 board is not inserted correctly, or the CPU bus interface is faulty.
ID ERR	The cassette ID hole sensor switch is faulty.
IF241 BD	The IF-241 board is not inserted correctly, or the CPU bus interface is faulty.
LINE ERR	With another unit connected as the master to one of the REMOTE connectors of this unit, the CONTROL P or R button of this unit was pressed. When the recorder is in the synchronized sequential mode, the slave unit mode is malfunctioning (for example, the cassette tape isn't inside or the REMOTE/LOCAL switch is set to LOCAL). To erase the message, press any function button*.
LOST LCK	The drum or capstan servo lock was lost momentarily during recording or editing. Even if this error occurs, the operation in progress will continue. The message disappears when any function button* is pressed in LOCAL mode or when a remote control command or a LOST LOCK RESET command is received in REMOTE mode. *(See page A-4 for the method of locating the lost-lock error.)*
MUTE	In PLAY mode, an unconcealable error was detected in the digital audio playback signal.
NEGATIVE	The video or audio IN point is preceded by the corresponding OUT point.
NO RF	The RF signal is missing, or it cannot be obtained because the drum is stopped with the TAPE indicator lit in the 21-key section.
NO REF	When menu item S12 REF SELECT is set to INPUT or EXT REF, no reference signal for video recording or playback is input. An appropriate video signal or external reference signal must be input to the corresponding VIDEO IN connector (Y/G or EXT SYNC) according to the setting of S12.
NO REF *	The reference signal selected with menu item S12 REF SELECT is input but inappropriate.
NOVRAM	When the power was turned on, a NOVRAM checksum error was detected on the IF-241 or RM-68 board.
REEL ERR	The frequency generator system or drive system of the reel motor is faulty.
RM68 BD	The RM-68 board is not inserted correctly, or the servo CPU bus interface is faulty.
SG169 BD	The SG-169 board is not inserted correctly, or the CPU bus interface is faulty.

* Function buttons: REC/EDIT button, PLAY button, STANDBY button, STOP button, SHUTTLE button, JOG button and VAR button

Error message	Description
SLACK	The tape slackened while being moved. While this message appears, the unit does not accept any operation command. To erase the message, once turn the unit off or eject the cassette.
SRV ERR	The interface between the SY-144 and SV-116 boards is disabled because of an error in the servo system.
SV116 BD	The SV-116 board is not inserted correctly, or the CPU bus interface is faulty.
SV DBUG	The servo system is in debug mode. While this message appears, the unit cannot operate normally. To exit the mode, turn the unit off and set SW2-8 of the SV-116 board to OFF.
SV TEST	The servo system is in test mode. This message does not appear during normal use of the unit. It appears only when the servo system is tested.
SW352 BD	The SW-352 board is not inserted correctly, or the CPU bus interface is faulty.
SY144 BD	The SY-144 board is not inserted correctly, or the CPU bus interface or I/O port is faulty.
SY NRDY	The SY READY signal from the SY-144 board is not activated. If this message appears, the unit is out of order. Call Sony service personnel.
SYS ERR	Either of the following two cases occurred: • A short-circuiting key was detected in the initial automatic checkup. In this case, the SYSTEM indicator on the function control panel will light and the buzzer will sound. • An error was detected by the CPU on the SY-144 board during ordinary operation.
TAPE DEF	The tape is broken. Replace it.
TAPE END	All of the tape is on the take-up reel.
TAPE OUT	No cassette is loaded. In this case, the unit enters STOP mode automatically.
TAPE TOP	All of the tape is on the supply reel.
TEN SENS	The tension sensor driving current is not flowing. Check to see if the CN-384 connector of the RM-68 board is securely connected.
TEST MOD	After the unit was operated in TEST mode from the Test Mode menu, the SET UP key was pressed to leave SET UP mode without resetting the Test Mode menu settings to the defaults.
UNLD ERR	The take-up reel does not work for unloading the cassette. Unload it by hand, then check the reel motor in test mode.
VR91 BD	The VR-91 board is not inserted correctly, or the CPU bus interface is faulty.
VR92 BD	The VR-92 board is not inserted correctly behind the level control panel, or the flat cable to connect the VR-92 and the SW-352 board is not connected correctly.

Checking the locations of lost-lock errors

If the drum or capstan servo lock is lost in PLAY, REC, or EDIT mode (lost-lock error), the time code representing the error location is stored in memory. You can recall the stored time code for checking in PLAY, REC, EDIT, or STOP mode.

Recalling the stored time codes

To recall the time codes representing the lost-lock error locations, rotate the search dial in either direction while holding down the STANDBY button in PLAY, REC, or EDIT mode or the STOP button in STOP mode. The time codes that have been stored will appear in block 4 of the display in the ascending or descending order depending on the direction of rotating the search dial while block 6 shows "LOST LCK". Every time a new time code appears in block 4, the time code previously displayed in the block will move to block 3.

Erasing the stored time codes

To erase the stored time codes representing lost-lock error locations, use either of the following two methods:

- Switch the unit from STOP mode to PLAY, REC, or EDIT mode.
- While holding down the STANDBY button, press the RESET button. (The IN and OUT points that have been stored will be retained without being erased.)

Checking the locations of muted errors

If an unconcealable error is detected in the digital audio playback signals in PLAY mode and is muted, the time code representing its location is stored in memory. You can recall or erase the stored time codes in the same manner as used for the lost-lock errors. When they are displayed, "MUTE" will appear in block 6.

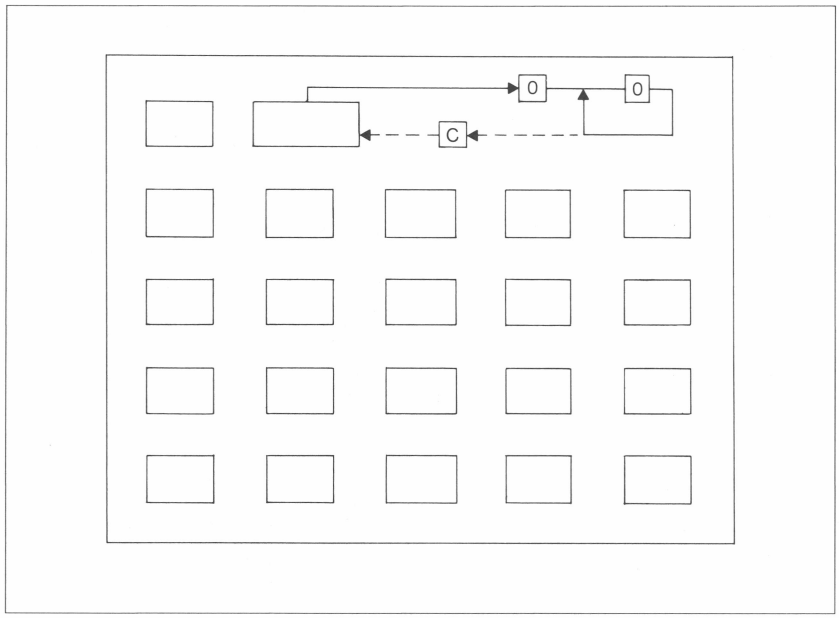
Other messages indicated in block 6 of the display

The status on the HDV-10 is also indicated in block 6 of the display as listed below. The status messages TAPE OUT, TAPE TOP, and TAPE END are also displayed in block 6.

Status	Description
FREEZE	This message appears when: • The TAPE indicator lights. • The menu item S04 FREEZE MODE is set to FIELD1, FIELD2, or FRAME. • The stop button is pressed during playback. Then a freeze frame picture is output.
REPEAT	This message appears during playback in the PROGRAM REPEAT playback mode.
SEEKING	This message appears while the unit is searching for the playback start point in the synchronized sequential playback mode. At this time, the video output signal is black and the audio output signal is muted.
SEQ PLAY	This message appears during playback in synchronized sequential playback mode.
SEQ REC	This message appears during recording in synchronized sequential recording mode.

Appendix B. Overlay Sheet for the 21-Key Section

Fit the overlay sheet over the 21-key section and label the current allocation for the Preselect menu.



Overlay sheet for the 21-key section

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